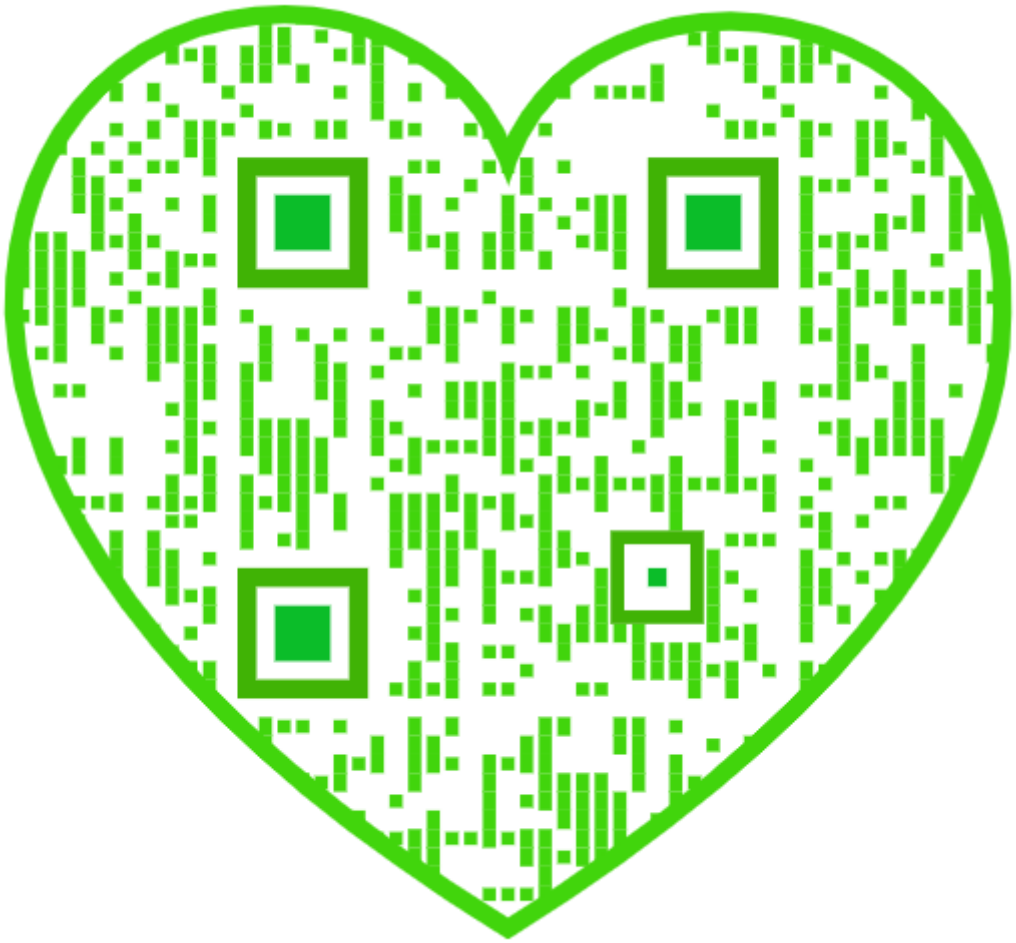
ILLUSTRATED BOOK OF POULTRY

BY

Martin Doyle.



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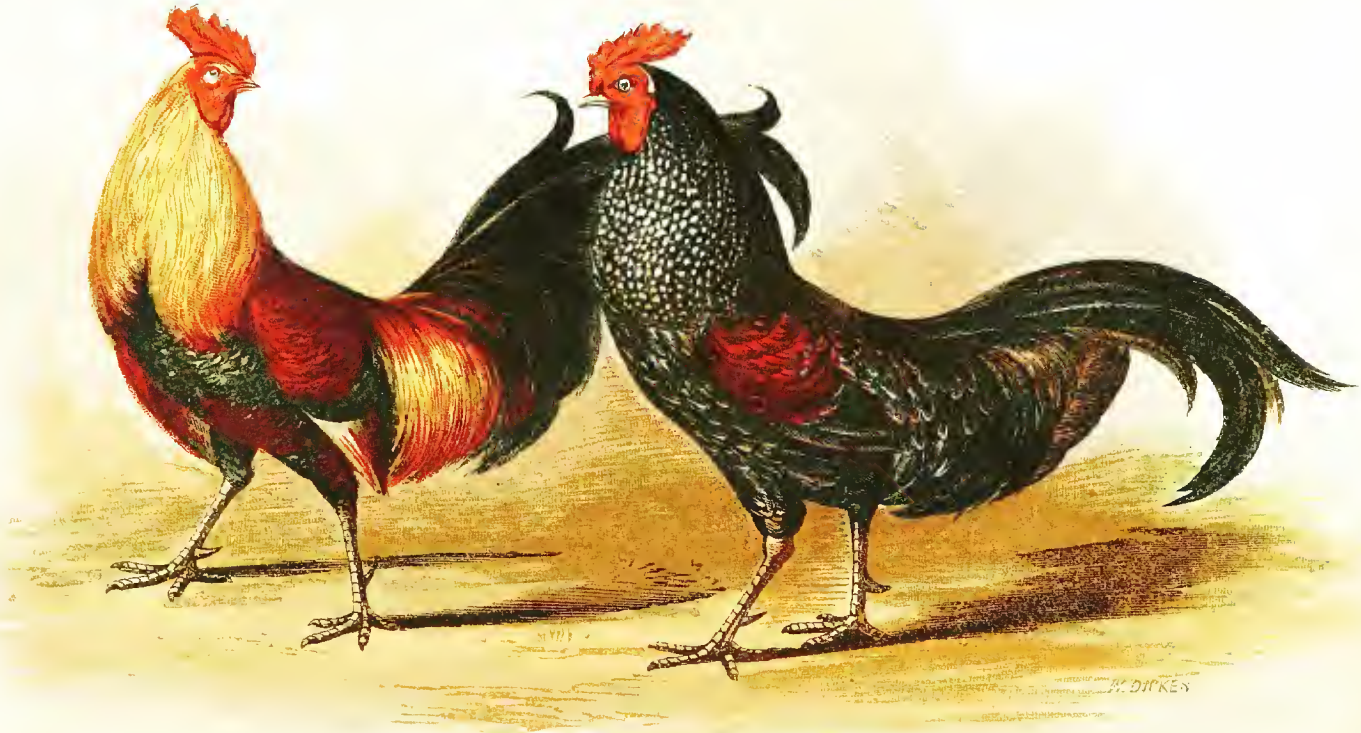

JUNGLE FOWL

THE

ILLUSTRATED BOOK

OF

DOMESTIC POULTRY.

EDITED BY

MARTIN DOYLE.

THE FIGURES DRAWN FROM NATURE BY C. H. WEIGALL;

Engraved and Printed in Oil Colours by W. Dickes & Co.

A NEW EDITION.

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DOMESTIC POULTRY.

Our Domestic Poultry belong, respectively, to three distinct orders of the class *aves*; viz., the rasorial or gallinaceous order, the columbine or gyratorial order, and the natatorial or swimming order.

As the term *rasores** leads us to infer, the birds included in this class are chiefly, if not exclusively, terrene in their habits; many of them roost, for they can hardly be said to perch, on trees, though they can use their wings; but some, as the partridge, grouse, and others, remain always on the ground. The generic characters of the *gallus* are, — bill moderate, strong, convex above, curved towards the point, naked at the base, and furnished with fleshy protuberances, called wattles; head surmounted with a fleshy crest or comb; legs in the male, armed with a long spur; wings short and graduated; tail-feathers fourteen, forming two vertical plains, with the under side of the feathers inclining towards each other, and so making what may be called a folded tail; the middle feathers longest and curving backwards.

It would seem that all attempts, beyond a certain point, to trace back the history of some of our most common fowls, have been unsatisfactory; but it is generally agreed that their ancestors were natives of the warm climates of Asia; and the observations of travellers would direct us to look to the

* From *radere* (perf. *rasi*), to scratch.

forests and jungles of India for the aboriginals. Although some difference of opinion exists as to the precise race from which any individual tribe has sprung, or the exact original locality, the more common opinion is, that they have all proceeded from one of the following specific types.

First.—The *Gallus giganteus*, or large Kulm fowl, as it is called by Europeans in the Deccan country, where it is domesticated, as also in the Malay peninsula; and to this parent stock are traced, by some ornithologists, the Malay, the Pheasant Malay, the Shanghae, and others.

Second.—The *Bankiva* or Javan cock occupies, according to Cuvier, the second rank in the production of our domestic fowls and their varieties, having, equally with the first-mentioned type, many points in common with our fowls of all denominations; and from this source Temminck supposed that the Common, the Crested, the Bantam, Dwarf, and Dorking, have sprung.

Third.—*Gallus Sonneratii*, or the Jungle Cock of British sportsmen in India. Sonnerat, differing from others, is of opinion that this is the original parent cock. Colonel Sykes relates that this bird is very abundant in the woods of the Western Ghauts, where there are two very strongly marked varieties. In the valleys more than 2000 feet above the level of the sea, this species is found; and in the belts of the woods, on the sides of the mountains, at 4000 feet elevation, there is a short-legged variety. Colonel Sykes found the eggs of this species to be exactly like those of the domestic fowl in form and colour, though somewhat less in size.*

* To those who may wish to know the distinctions of the above supposed types of such numerous and various descendants, we give the particulars, with the authorities :—

Gallus giganteus.—It often stands considerably more than two feet from the crown of the head to the ground. The comb extends backwards in a line with the eyes; it is thick, a little elevated, rounded upon the top, and has almost the appearance of having been cut off. The wattles of the under mandibles are comparatively small, and the throat is bare. Pale golden-

Some naturalists have concluded that the parentage of our fowls can be traced to the *Capercailzie*, or Cock of the Woods, which is now nearly extinct in the British Isles, although still abundant in some of the northern parts of the continent of Europe.

That the fowl was domesticated and extensively spread at a very remote period is most evident; for when the Romans first invaded the shores of Britain, they found both the fowl and the goose in a state of domestication, but not for the purposes of food, for Cæsar says, "they deem it not lawful to eat the fowl, the hare, and the goose; nevertheless, they breed these animals for the sake of fancy and pleasure."

Sacred history, in the enumeration of the provisions for the supply of Solomon's household, mentions "fatted fowl."

reddish hackles ornament the head, neck, and upper part of the back, and some of these spring before the bare part of the throat; middle of the back and lesser wing-coverts deep chestnut, the webs of the feathers disunited; pale, reddish-yellow, long, drooping hackles cover the rump and base of the tail, which last is very ample, and entirely of a glossy green, of which colour are the wing-coverts; the secondaries and quills are pale reddish-yellow on their outer webs. All the under parts deep glossy blackish-green, with high reflections. The deep chestnut of the base of the feathers appears occasionally, and gives a mottled and interrupted appearance to those parts.—"Penny Cyclopædia," principally from Jardine.

Gallus Bankiva. (Temm.; Javan Cock, Latham).—Length, twenty inches or more; bill, pale brown; sides of the head bare; serrated comb; moderate-sized wattles; crown, nape, and neck, furnished with hackles of bright ferruginous shade; saddle hackles similar, but paler, and long at each side over the quills; the middle of the back, and the plumage across the middle of the wing-coverts, fine reddish-chestnut; but the shoulders, lower series of wing-coverts, and scapulars, steel-black; quill-feathers tawny brown, with blackish ends; within, dusky; beneath the body, from the heart and under wing-coverts, black; tail steel-black, long, and curving downwards; the feathers of unequal length; the two longest curving like a sickle, and four inches longer than the adjacent ones; legs dusky, with a stout, sharp spur, three-quarters of an inch in length.—*Hen*, much smaller.—LATHAM.

Gallus Sonneratii.—The cock is grey, varied with red and white; the chest reddish; the neck and wing-coverts yellowish and ashy-brown, and the tail glossy green. The hen is smaller, without any comb or wattles; the head feathered, and the body duller, varied with brown and red.—SONNERAT'S "Indian Voyages."

After the Babylonish captivity, we cannot doubt that the fowl was among the domestic animals of Palestine; for Nehemiah (B.C. 445), in his rebuke of the Jews, says, c. v. ver. 18, "Now there were at my table, prepared for me daily, one ox and six choice sheep, also fowls." Antecedently to this period, the fowl was abundant in Persia. Thus Peisthetairus (Aristophanes): "No lack is there of proofs to show the truth of our opinion: that birds, not gods, o'er men and kingdoms reigned, the kings and sovereigns were of yore. And first I instance, in the cock, how he the sceptre bore; how, long before their monarchs the Persians him obeyed, or ere Darius or Megabyzus swayed. And so, he's named the Persian Bird.—And still he struts; no other bird there is that wears the turban cock'd* but he." Not only do the classic poets and historians speak of the high antiquity of the fowl, but medals and coins proclaim the same, and bear its figure stamped upon them; nor is its delineation absent from other relics of remote periods.

Among the Greeks and Romans, the fowl figured in the public shows. The cock was dedicated to Apollo, to Mercury, to Esculapius, and to Mars; and its courage and watchfulness were well appreciated. The Rhodian fowls, and those of Delos, Chalcis, and Media, were celebrated for their superiority in fight, and for the excellence and delicacy of their flesh. At every Roman banquet, this bird formed a highly-esteemed dish, and then, as now, was fed and fattened up to great perfection. The custom was to cram the fowls with meal, and keep them in the dark, that they might more readily fatten. Cock-fighting was a diversion in accordance with the taste of the Romans, and they were as much devoted to it as the Malays of the present day, who will stake their all upon the issue of the battle.

The fowl is also domesticated in great abundance by

* The king only among the Persians wore his turban erect.

BUFF SHANGHAE

natives of various parts of Africa, in America and in Australia. It is numerously reared even by the most barbarous and ignoraut people, in all the isles of the South Seas, for the purposes of food, as also for sport.

We shall first introduce to the reader's notice the largest and most important breed in our country, and the most recently established in it,—

The Shanghae Fowl,

Commonly called Cochin-China.

This most gigantic of all domestic fowl is universally admitted now to be a native of that part of the Celestial Empire called Shanghae, but owing to the circumstance of Cochin-China having been the place whence it was imported into England first, the name of "Cochin-China" has attached itself to this species with a familiarity somewhat improper, it must be allowed. The patronymic "Cochin-China" will, with the multitude, retain the preference it gained through an accidental event. We shall use both names.

This addition to our varieties of poultry has been but very lately introduced to us. We believe that the first specimens that made their appearance in England, came as presents to the Queen, in the year 1845; and her Majesty, being desirous that they should be naturalized, and propagated throughout the British Isles, commanded that eggs should be dispersed among some few of her subjects who would be most likely to assist in carrying out her beneficent wishes. Since then the *Shanghae* has wonderfully increased its numbers, being comparatively well known, and reared extensively by amateurs and breeders.

Some splendid specimens from the royal stock were, for the first time, publicly exhibited at the Dublin Cattle Show of 1846. For their stupendous size, their shape, the beauty

of their plumage, and striking appearance, they elicited abundant admiration, although some indications of an additional toe, together with certain deviations from the strict conformation of the pure *Shanghae's* head, afforded to the connoisseur sufficient evidences that they had been crossed with the Dorking. The exhibited birds were subsequently presented to Lord Heytesbury, the then Lord Lieutenant of Ireland.

The specimens our breeders first exhibited differed considerably in some particulars from those which gain prizes in the present day. They were then furnished with a more abundant tail, some had no feather down the leg, in many instances the hinder parts were more diminutive, the thigh joints somewhat smaller, and finally, they did not then attain to quite their present size.

A superficial view will not lead to a just appreciation of the Shanghae fowls' form. Their massive body, short heavy wing, the deep contraction underneath their crop, the feathers growing down their leg even to the very toes—if they be of high blood—are striking contrasts, in these particulars, to our English fowls.

Their heavy-clad and clumsy-jointed thighs give them a most ungainly gait; but yet in certain attitudes, as may be seen on reference to our illustration, their noble frontal outline, from the erect and brilliant comb down to the feathery toe, the full mild eye, the proud and graceful arching of the finely curving neck, the florid and ample wattles which fall from the well-balanced and handsome head, and richly ornament the throat, the hackle opening gently to display the full, advancing breast, the decorated leg, the outspread foot,—all these combined present a beautiful and most imposing figure.

Some authors have described the *Shanghae* as doubling the wing upon its back in a most curious way. Among our

stock we certainly have one which doubles up the wing as they relate, but not another, even of the same hatch, betrays such a peculiarity. A skilful and well-known veterinary surgeon has subjected it to a long careful examination, but he could not find, either in joint or muscle, any departure from the general conformation which might account for the propensity. We think it simply was a habit first acquired by the bird from having taken cold internally, which rendered it the smallest cockerell among the brood; its progress had been checked from cold caught while yet a chicken of a few months' growth.

The full-grown cock weighs from nine to fifteen pounds, the hen from seven to ten. In height, the male bird grows from twenty-two to twenty-five inches, the female from eighteen to twenty-two inches.

Their growth will much depend upon the season of their birth, and manner of their rearing, the quality and measure of their food, and their being at liberty in field or meadow, or confined, with other circumstances which will be treated of in due course.

Tame, inoffensive, and sociable, the *Shanghaes* seldom exhibit a pugnacious disposition. They soon become acquainted with their feeder and with each other also. The male bird is exceedingly affectionate towards his hens, and incapable of unkindness.

The *Shanghaes*, although so tame, running towards their feeder at a call, eating food out of the open hand, have an insuperable objection to be handled, struggling with wing and leg to be released when taken off the ground; not wildly flapping, nor yet screeching out; neither, when released, seeking by flight to avoid all further ruffling of feather and of temper, but on the contrary, submitting unreservedly to a repetition of the distasteful treatment, yet as often as they are taken up, using their

utmost force to get free. Should any of our readers be disposed to test this patience—almost amounting to stupidity—in the *Shanghae*, let them remember that its stunted wings, so disproportioned to the heavy body, assist it very little in alighting on the ground; care, therefore, is needful, lest in the struggle it should fall too heavily, and thereby be contused. From this liability to come to the ground, particular attention should be given to the roosting-place. When left to their instincts, these fowls invariably choose low resting-places, from the inability of their short wings to aid them in descending safely from a height, which in other kinds would be easy; roosts, about eighteen inches above the ground are high enough; they should be large in diameter,* because the length of feet, and the heavy weight of this breed, render such circumference of the poles necessary, in order that the claws may maintain a firm clutch and perfect equilibrium without inconvenience or effort.

If the birds be allowed to sleep on the ground, and on litter for warmth, this will require frequent change, especially in summer; whereas, if they perch, a weekly thorough cleansing will be sufficient, unless their number be very considerable.

The *Shanghae* hen, from her great breadth of body, gentle disposition, and domestic habits, is peculiarly adapted for fulfilling all the offices of a mother. She can, if required, cover fifteen eggs, but thirteen are sufficient, even in warm weather; a larger number is inconvenient, from their greater liability to be broken when the hen changes her position; and in cold months her animal heat is insufficient to yield warmth to more than eleven eggs, unless she exceed the average size. In the summer we have frequently put under a hen of this race the highest number just mentioned, and reared the birds without loss.

* Minute details for the construction of roosts will be given in a distinc series of observations on MANAGEMENT.

The *Shanghae* expands her feathered form to an amazing size. If at any time it should be desirable to remove her to another hatching-place, there is seldom difficulty in getting her to take her seat in it, especially if the removal be effected late in the evening, or at night. Her eggs, like those of other fowls, require the term of one and twenty days for the hatching process; but (as in the past summer of 1853, a peculiarly unfavourable season) instances occur of a more protracted incubation, even in some of the driest and warmest parts of England. We are informed that cases of such prolonged hatching have been experienced in our neighbourhood (in Berkshire) to the twenty-fifth day.

The Shanghae chick, from its first step into the world, displays the gait with which this breed peculiarly moves at all times, exhibiting also that tameness which distinguishes it. It is amusing to observe the consequential strut of these chickens among those of a smaller-sized race, as if they were well aware, that eventually they would become the greatest of them all, though now no bigger than the others. The "fluff," or long hair, appears on their legs and thighs at their very birth; the beak has a decided greenish tinge; the eyes appear almost black; but the colour of the plumage varies greatly during the early period of their feathering, frequently exhibiting very light shades, and afterwards darker feathers in the wings and hackles, until at length, the chick, which was at first of canary colour, grows into a partridge or dark brown shade. Little can be determined of their future tints until the down gives place to feathers. These, as elsewhere observed, are of very slow growth in the breed under consideration; whilst the game and other tribes are becoming full-feathered, and their colours may be determined, a Shanghae of the same age is clothed in nothing better than a sort of flimsy down. Individuals of them, when in this state, have been observed to lie down in cold weather, on straw or hay, and turn their few quill feathers inwards

to the body, as if to impart additional warmth to it. They sometimes rest on their legs, which are turned under them (not doubled like those of a tailor when facing his goose, but at right angles to the thigh.) This they do to give warmth to the breast and under part of the body; but more generally, this singular attitude is assumed to relieve their long legs from the weight of the heavy body, which grows rapidly. A sensation of chilliness, and not the affectation of a graceful position, causes the goose to assume its favourite posture of standing on one leg, with the other pressed against the under part of the body. The uncommon resting position of the *Shanghae* is the more curious, as the Malay and Black Spanish are quite as long legged, and yet have not the same propensity. The first-mentioned habit of turning the quill feathers inwards has given rise to the idea that "the disposition of the feathers on the back of the cock's neck is reversed, these being turned upwards; and the the wing is jointed, so that the posterior half can at pleasure be doubled up and brought forward between the anterior half and the body."—This is shown to be a complete absurdity, by the fact that Mr. Bissett, who had a bird with this habit, examined him minutely, and found that the conformation of his wings was the same as in other fowls, and that as he became feathered, and therefore felt comfortable, he lost the habit.

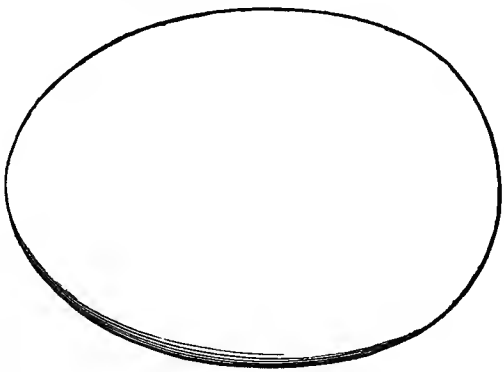
This family, however, is very strong and hardy, and thrives, in favourable places, from the first moment of their birth until they reach mature and hardened growth. Indeed, there is no reason against a complete acclimation of them in England, when it is considered that the climate of Cochin China, from whence they have come, experiences, during three months of the year, more and much heavier rains thau fall in this country; and that these are preceded by cold northerly winds which distinguish that division of the Eastern World by a winter much colder and moister than is

experienced elsewhere. Constitutions, then, habituated to such vicissitudes, cannot find our temperate climate ungenial, as it certainly is to the native fowls of the eastern countries generally, from which we have received so many importations, now naturalized, or in course of being so.

Yet, as the temperature in the western and north-western countries of Great Britain and Ireland is, on the annual average, much inferior to that which prevails in many parts of England; and the atmosphere in those localities frequently loaded with cold moisture, and without the counterbalancing advantage of long-continued drought and warmth at any time, it is questionable whether birds which continue ill-fledged so long, should be chosen in preference to the long-naturalized and hardy barn-door varieties. The same objection, of course, rests against the introduction of any of the new and delicate Asiatic tribes. These are all creatures for sunshine, and exquisitely sensitive of cold and dampness, which the vicinity of the Atlantic, in our latitudes, and of high mountains, always occasions.

Some *Shanghaes* manifest more desire to sit than to lay eggs; others again, and these comprise the great majority, are disposed to incubate after laying about twenty-five eggs; while others, again, entertain brooding longings but once in a year, and then, not until after laying fifty or sixty eggs. The hen should not be set too early in the year, because, from her general disposition to leave her brood after a short nursing, and to lay again (qualities which really enhance her value in the point of productiveness), she might repudiate her chicks in the early cold season, when the maternal wings would be indispensable to their existence. Therefore, when early broods are wished for, mothers of other classes—Game, Dorking, or any common variety,—are preferable for hatching the *Shanghae* or any other choice fowl's eggs, whereby the mischances from insufficient nursing will be avoided.

The egg of this tribe is generally of a buff or pale chocolate tint, depending for its depth of shading on the colour of the bird from whence it proceeded. It is thin and blunt in shape—in harmony with the bird's broad form, and the flavour is considered excellent.

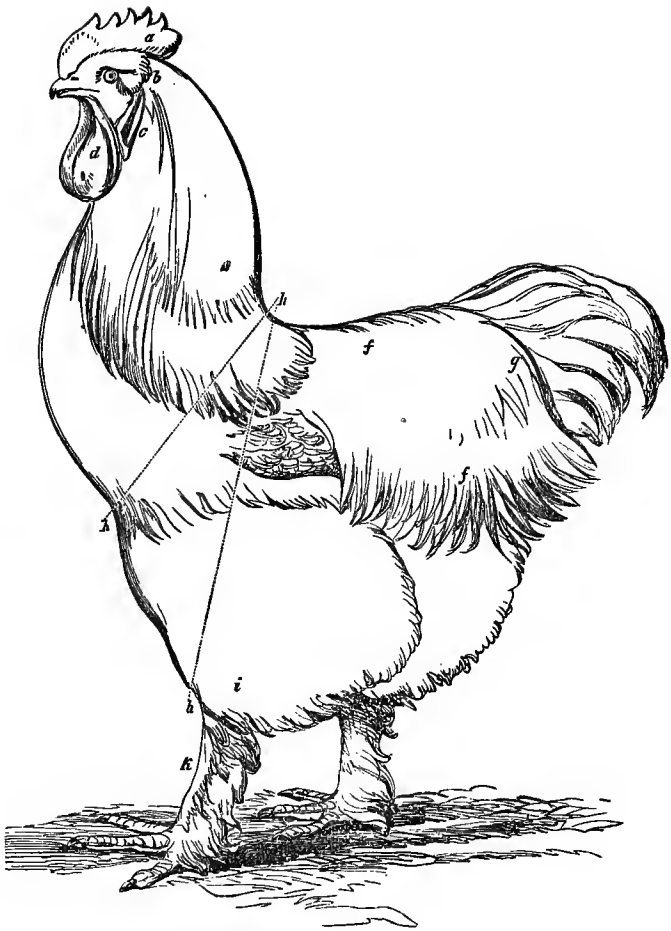


The *Shanghae,* unquestionably, is one of the most productive of fowls. Among one breeder's stock, there were three hens which, in twenty days, laid the total number of fifty-nine eggs. Another hen laid forty eggs in forty-seven days; and the number would have been higher but from the circumstance, that during the same period, she one day showed a strong desire to brood. To check this, she was put into a coop, within full view of kindred and kind. The sight of their unrestrained freedom operated so excitingly on the latent love of liberty within her, as to relieve her from the incipient hatching fever which had rendered her short imprisonment necessary; so, after she had deposited some eggs as satisfactory evidence of her renewed disposition to yield more, she was discharged from further custody.

As the season advances, it becomes more difficult to check this excessive desire to hatch. In the foregoing case, the desire to sit continued from the 23rd to the 28th of

February. On the next occasion, eleven days passed before the fever was subdued; and we have had hens of the Cochin breed, which have passed the entire month of September under the influence of the brooding fever, which no treatment subdued,—thus, as has been first intimated, acquiring increased force with the advancing year. So fertile is this race, that there are numerous indisputable cases of hens belonging to it, having laid two eggs in one day. Three eggs have been laid in twenty-four hours to our own knowledge, on one or more occasions,—one with an interval of twelve hours between the layings. But this occurrence has no doubt arisen from some unhealthy, or very peculiar condition of the ovarium; yet, we have known cases, in which there was no indication of unhealthiness or apparent injury, or inconvenience to the hen, or of obstruction to her regular course of laying. Such facts were at first doubted, but they are now too well established for dispute. This double laying occasionally within twenty-four hours is, as far as we know, a peculiarity of the prolific family under notice; but we are not to imagine, from this occasional occurrence, that the breed may be habituated to laying two eggs daily; and that the American journalist is serious in making this announcement: "A 'cute Yankee has invented a nest, in the bottom of which there is a kind of trap-door, through which the egg, when laid, immediately drops; and the hen looking round, and perceiving none, soon lays another."

We now address ourselves to such persons as are selecting stock for breeding or general purposes; and for the assistance of those who may not be familiar with the terms given to the several points of the external conformation of fowls, we present a diagram of external structure, the reference letters on which will serve as keys for the explanation of the several parts.



EXPLANATION.

a, Comb.
b, Ear.
c, Ear-lobe.
d, Wattles or Gills.
e, Neck-hackle.
f, *f*, Saddle-hackle.
g, Stern.
h, *h*, *h*, Girth.
i, Thighs.
k, Shanks.
l, Wing.

To fanciers unacquainted with the attributes which first-rate birds of this species should possess, and consequently deficient in critical judgment to decide upon the qualities necessary to the composition of a valuable Shanghae, a visit to some dealer of acknowledged probity is requisite.

From such an one, procure a pair of valuable fowls, and though they cost double, nay, treble the price of inferior birds, let it be taken into consideration, that such a pair is destined to become the founders of a line—the ancestors of a race that may be multiplied to infinity; and when all their numerous progeny possess accumulative value in themselves, —which certainly they will if the stock be good, and subsequently well sustained by intermediate infusions of good blood—who then can fix the value of the pair from which a stock of Cochins is to arise of the choicest qualities? Some five years hence, look back, and count the value of the stock reared from your first fine pair, and you will then acknowledge that the investment of an extra guinea or two has yielded an enormous rate of interest.

You will need such clear descriptive rules for guidance in selecting prime stock in shape and colour, and, indeed, in every point, that you may venture to make your purchase on your own examination of the birds.

A superficial observation of the *Shanghae's* peculiarities of form will generally lead to most unfavourable opinions. As the most exquisite and fine chords of music—the deepest, most subdued, but most harmonious tones—require the educated ear to catch, enjoy, and indulge in the enrapturing feelings they evoke; so to appreciate the points and excellences of this remarkable bird, there must be a cultivated and discriminating taste, a keen discernment of merit, and an unprejudiced attention to the harmony of parts, proportion, and colour.

To found a judgment of the pretensions of the *Shanghae*

to beauty upon such specimens as occasionally meet the eye about our public thoroughfares—fowls turned adrift by economic owners, to pick up their living where they may,—is just as unreasonable as if fastidious foreigners were to form their conclusions and opinion on the Anglo-Saxon race in general, by studying a London scavenger's form and style. To perceive the eminence to which *Shanghaes* may be raised by a judicious course of management—by scientific breeding — one must view the flocks of them reared by our eminent breeders; or the specimens which our poultry-shows present, though in such exhibitions the eye is more likely to be caught and carried captive by the brilliant multi-coloured plumage of the familiar and more gaily-decorated birds.

Notwithstanding these disadvantageous contrasts, high, well-bred *Shanghaes* will, to an observant eye, well bear comparison with fowls in great favour and repute for grace-fulness of carriage, beauty of feather and form, and perfection of established points; but the characteristics of the *Shanghae* are unique; a most conclusive reason is therein presented, why we should judge them by such rules as correspond exactly with their differential points. We compare the *Shanghae,* for instance, with the Game fowl, a class to which it forms a most especial contrast from neck—not head—to toe.

The Game cock throws his neck and shoulders back bold and defiant; the Cochin meekly inclines its breast towards the ground, although but slightly, and as if in courtesy rather than servility; whilst, as regards its gait, no histrionic lord can tread the stage with more heroic step than doth our *Shanghae.* The plumage of the Game cock sets at defiance all the skill of painters who desire to equal nature in her brilliance, vividness, and glossiness; but the exquisite feather-ing of a *choice Shanghae* has great beauty in the eyes of a judge of its merits.

Regarding colour, fanciers' opinions are so various, that each individual taste may be indulged in this particular. Good birds, like good horses, may be of any colour. Even when the highest prizes at poultry-shows are in question, if there be the following points and qualities, colour may hold a secondary place. Should these be wanting, the richest hues the plumage may display, will avail nothing in competition for a prize.

The points required by really qualified judges on the subject are as follows :—

As regards the *Shanghae :* the beak at its base very thick, short, slightly curved, and decidedly yellow; the comb perfectly erect, without any inclination to either side, single, evenly serrated, of fine texture, in colour bright vermilion; wattles broad, vermilion-tinted also, and hanging down about two inches; the eye bright and mild, indicative of good temper and good health, not glaring but yet strong; the colour of the eye corresponding with the colour prevalent through the entire plumage, but more intense and deep. The head ought to be well-shaped and small; the ear betraying no trace of white, as this, though in itself no blemish, is repudiated in the *Shanghae* by the rules of criticism, because it is characteristic of the Spanish race; the breast full and deep; the back rising, but not abruptly, to the tail, which should have elevation just sufficient to preserve the upwardly inclining line until the feathers droop in scimitar-shaped curves; the tail itself, short and firmly fixed, should be profusely furnished with "fluff," which should also be abundant on the thighs. Considering the *Shanghae's* great size, the neck can scarcely be too short; the neck-hackles should appear well trimmed, compact, and falling gracefully on the shoulder; the wings short, convex in form, closely fitting the sides, their feathery points being hidden beneath a portion of the saddle-hackles, laden with a

mass of feathers hanging like heavy foliage, and fringing the thighs and stern; the body should have a somewhat forward inclination, though the head cannot be too upright; thus walking with a sedate and measured stride, a step especially taken by the *Shanghae,* its gait and carriage irresistibly convey to us the idea of easy movement, joined with a certain dignity of bearing; while from the joint at which the heel is lifted up, until the foot is again planted on the ground, so beautiful a circling curve is drawn, that these birds really have very graceful action as they move. But if they attempt a flight, a waddling gait destroys the previous impression. The legs should be quite firm, apart in due proportion with the breadth and weight of body they sustain; the shanks short and thick; the toes well spread, the middle one nearly double the length of the others: the legs vary in colour from bright orange-yellow to vermilion-yellow. *Shanghaes* should always be well feathered (technically booted) down the legs; but, upon the necessity of this, contrary opinions are held by eminent judges; therefore, the rule cannot be made absolute: yet it may fairly be urged, on the broad principle of uniformity. A feature of the greatest prominence in this species is, peculiar and excessive featheriness; feathers should, therefore, literally extend from head to foot. It is, however, of the utmost consequence, that the feathers of the legs be of the hue prevailing throughout the plumage; and if the *pure* breed be required, no rudiment even of an additional toe should be perceptible, else a cross with the Dorking is proclaimed.* Their plumage varies much in colour and tint.

The *White* variety, when feathered well and perfect, is very choice and beautiful. In this sort there should not appear any indication of black, or pencillings about the feathers of the hackles, for its value greatly lies in delicacy and purity. This kind is comparatively rare; yet very perfect spe-

* Yet not always with certainty.

cimens are to be met with, a fact sufficiently accounting for the enormous sums they have occasionally realized. Large towns, surcharged with smoky atmospheres, are most unsuited to the production of white *Shanghaes;* it is under a pure sky, and on clean grass walks, that the white will appear of clear colour.

From a white cock and hen, imported into England in 1851, were bred three cockerels; of these, two were sent into the country; the third was forwarded to a gentleman at Bermondsey. This bird, the next season, moulted dun—blue dun-colour. There was not a white feather except in the tail, and there the colours were mixed. The mystery, however, was solved through the inquiries of a Chinese agent, who, on his return home to Shanghae, discovered from the breeder who had reared the birds in question, that the grandsire of the cock was bred from a white cock and a dun hen. It appears to be an established truth, that differences of colour in feathers, usually imputed to chance, set down as merely accidental, and considered unaccountable, are invariably the results of some such cross as that just mentioned.

The *White Shanghaes,* so far from being, as some affirm, weak and sickly birds, are, we are assured, quite as vigorous as the most robust of their congeners, with the exception of the brown and partridge variety.

The *Grey Shanghaes,* a sub-variety of the *White,* are pencilled both in the neck and saddle hackles, and also in the wings and tail. When regularly marked, they have a very finished and neat appearance. Occasionally their pencillings are more irregular, and sometimes they have greatly the appearance of being a spangled sub-variety. Minute inquiry has established it as an undoubted fact, that they are but a cross of colour, not a separate variety. They have been shown as a distinct species in some instances, under the name

of Brahmahpootra, a river in India, which waters the territory of Assam. Some of them have been imported from America, and on that account stated to be of American origin. Though described to have some of the character of the Malay tribe in the peculiar serpent form of head and neck, there is little doubt of their having been Shanghaes. How and when they were taken to America, matters not; but from the East they were in all likelihood taken there. We learn from a Philadelphian gentleman, who related the fact in 1850, that he had then two varieties, which he had imported a few years previously from Shanghae. Are we to have all the importations of fowls from China to ourselves? and if any variety starts up, and some specimens of it are brought here from America, must we believe that they are aboriginals of that country? None of these Chinese birds pleased us at first. Mr. Sturgeon, who has become so distinguished a breeder of them, has related the unfavourable impression they at first made upon him; which reminds us of the extreme disappointment and contempt the gardener of Sir Walter expressed when he saw the fruit of the Virginian potato, which had been recently imported from Virginia: "Is this the fine American fruit?" Mr. Sturgeon asked the price, and denounced six shillings or eight shillings each as most extravagant; and so little did one of his family appreciate their merits, that he immediately killed two out of five. However, a cockerel and two pullets were left with Mr. Sturgeon. Of these the cockerel died; another was procured with some hens, of which Mr. Sturgeon thought as little as Raleigh did of his newly-imported potatoes, until he was induced to send them to the Birmingham show in 1850. All his good birds, which have become so famous, he says, came from Shanghae. If they differ at all from those which we call Cochin-Chinas or Shanghaes, it is in being a little taller and having stronger feathers on the legs. Dr. Gwynne,

who exhibited a pair at the Birmingham show of last year, stated, in reply to observations regarding a compressed comb in some of the specimens, which had given rise to dissension as to the Bramahpootras being or not a distinct species: "Out of some twenty chickens bred by the birds I reserved for myself (a cock and two pullets), I cannot detect a single instance of this deviation from the single combs of the parents. Another circumstance which confirms me in the view I have ventured to express, as to the identity of these (Bramahpootras) with the Shanghae breed, is the fact that the fowls recently presented to her Majesty by Mr. Burnham, under the name of Grey Shanghaes, are admitted by Dr. Bennett to be precisely similar to his own; and yet Mr. Burnham assures me that the original stock from which the Grey Shanghaes presented to her Majesty were bred, was imported by himself direct from Shanghae."

The *Buffs*.—The cock birds range from a bright yellow to a deep ginger tint; the hens, from a light straw to a deep fawn colour; the first-named tints being especially preferred The hackles of this sort present the different shades of orange hues, and sometimes crimson-yellow tints, with perfectly black tails. The tail should properly have exactly fourteen feathers, seven on each side; and before purchasing, these feathers should be counted, and the tail itself examined carefully, to ascertain if any have been plucked out,—a fraudulent practice frequently resorted to.

When the *buffs* are of a light and uniform tint throughout, with the leg-feathers of a corresponding hue, without pencillings, or blackish marks about the hackles, and having every point and quality that they ought to have, then these are held in great esteem indeed.

We would impress on our readers, as an important matter to be remembered by them, that, except in the wing and tail feathers, no dark discoloration nor black pencillings

should appear. It does not follow, that because good birds are sometimes found with such imperfections, that these defects become allowed, and even legitimate marks of superiority. Though perfection may be difficult to attain in poultry-breeding, as in other things, still it should be the object sought, and with good reason in the present case, since the absence of the objectionable points we are especially speaking of, forms a criterion for determining purity of breed. When pencillings appear upon the hackles, an evidence thereby exists, that at some period, lately or remotely, a cross of colours occurred. The sign by which such crossing is betrayed must not be lightly set aside.

The *Cinnamon* variety comprises birds from a pale-tinted to a deep reddish-brown. They are not bright and showy as the *Partridge-browns*, neither so neat and finished as the *Buffs*, but are even dull in colour, often of dead brick-red; nevertheless some good exceptions may be found amongst them. We have been informed of an instance in which nine or ten of this year's chicks of the *Cinnamons* are most excellently coloured, more especially the pullets. And this is supposed to be in consequence of the descent of the cock from a pair of birds whose mother came from a buff cock and cinnamon-coloured hen. When a cross of colours is allowed to take effect, it should be with such colours as blend together with the most artistic variety of calculation. It is well worth while to pay great attention to the harmony of colours, as an important element in rearing birds of handsome plumage. Breeders of beautiful varieties have gained all the celebrity that their fowls possess in this respect, by strict attention to the hues in which Nature herself paints all her most enchanting pictures.

Partridge and *Browns* (or *Grouse*) are frequently very handsome. The cocks of this variety often present black breasts and bodies; hackles of reddish yellow, with crimson

pinion-coverts, and black tail. By the same rule that affects *Whites*, no marks of white or grey should show themselves throughout. The hens are richly coloured, exhibiting dark pencillings about the neck-hackles. These birds, when suitably matched, form very pretty groups. From a black cock one year old, and a buff hen three years old, there was bred, last season, a fine brood of richly-coloured partridge-plumaged chickens. The pullets, as is generally the case, resembled the father, and the cockerels the mother. This variety, according to general testimony, is the hardiest of all the Cochin-China tribe.

Dun-coloured.—These, which are of a bluish slate colour, are not to be confounded with the distinct species which is known as *the* Blue Dun, which are altogether of a different description in size, character, and habits. The Shanghae Duns are seldom found of unmixed tint; but if of a fixed uniform shade, fine handsome birds of this sub-variety would be the result. The hens possess more beauty, and are more neatly feathered than the cocks. The genuine dun tint prevails more strongly through the feathers of the female than in those of the male, in which a dingy brown often supersedes the brighter hues. Duns are also unquestionably the consequence of crossing colours. They have repeatedly been obtained from most opposite varieties; more often from whites and blacks, or blacks and partridge-browns. Her Majesty has some at the Windsor aviary.

Blacks.—These are rare. It is always difficult to get them free from foul feathers, which will defeat every chance they might otherwise have of obtaining prizes at poultry-shows; for though the colour be not of great moment, still there are admixtures which detract so much from otherwise fine specimens, as to reduce their value to an extremely low point as far as fancy is concerned. The fact that this foul feather is so often found in the black variety, justifies the

opinion that they are but a cross of colour, not a distinct sub-class. Yet, there probably did exist a primitive variety of this kind, which has become extinct, or nearly so, though not until it had been crossed with many other birds, now considered extinct. The black hue occasionally shows itself still, even in a brood of lighter-coloured birds.

A gentleman of experience states that he, some time since, imported two light buffs, cock and hen, which had but a slight pencilling in the hackle. From inquiry into their lineage, it was known that they had not crossed for several generations. Upon pairing them, two of their chicks proved to be black, a proof to him, that latent blood of the black Shanghae kind had, though long dormant in their veins, at length manifested itself.

It does not come within the scope of our design to re-adjust descriptive names nor cavil at acknowledged terms, but to describe the various fowl by recognised appellatives; therefore we will not take exception at the designation "*Emu*" as applied to a variety of *Shanghae*, whose plumage bears considerable resemblance to the woolly coat of the Australian Emu fowl. The *Emu Cochin* is a little smaller than the other sorts, is usually of a buff colour, and not considered quite so hardy as the species in general, though possessing a fair share of its good qualities. It will be found in general, that cockerels take after the mother's side in form and colour, and that pullets follow the father in those particulars; yet, as may be inferred from some of our preceding observations, their antecedent crossings—if any occurred—had a powerful influence on the offspring; so that it is quite possible to breed from two light-coloured birds, and yet obtain dark birds, if the progenitors of the breeding pair had ever been crossed with birds of darker hue.

Some curious facts have been noticed with respect to the appearance of colours among individuals of the Shanghae

race. For example,—A gentleman had white and very dark-coloured Shanghaes, which paired promiscuously; in this case, no chickens were produced with dark plumage from the white, nor any with white feathers from the dark ones. Again, another person had two cocks, one white, the other grey, and some buff and grey hens: all the chickens—fifty in number—from these, were of the different colours, quite pure; the buff chickens had no white feathers, nor the grey ones a red one. There were no mixed colours. Whether this be a peculiarity in the Shanghae race, we cannot say.*

Among the usual varieties, some are marked upon the breast with touches of an inky shade, distributed in the form of a crescent. This must not, however, be accepted as a standard of their value, as many first-class birds possess no such marks. Some birds are firm in feather,—that is, possess feather of a silky and transparent character; others, again, are rotten-feathered:—seek always to procure the first.

Many fine-looking birds, upon being handled, will be discovered to be half made up of feather. Others, again, which, on a superficial observation, did not seem so large by far, when taken to the scale, will weigh two or even three pounds heavier. These latter will be found to have their feathers well set, their coats appearing as if made for them, not, however, that a large amount of feather constitutes a fault,—quite the contrary; but a corresponding fulness of flesh is to be wished for.

In breeding Shanghaes—and the same rule applies to every class of fancy fowls, especial care must be observed to avoid the slightest chance of crossing breeds; even two prize birds, differing in species, will, if crossed, produce birds which will be valueless as *fancy* stock. Highly injurious consequences, also, will ensue, such as reduction in weight, degenerated

* *Agricultural Gazette*, 1851.

qualities, and so forth, if birds that are related to each other —more especially brother and sister—pair together.

When breeding from relations, however, is unavoidable—as when a stock runs low, or other special reasons urge a continuance of the selfsame strain—the following course has been attended with great success throughout a protracted series of experiments, made with the view of ascertaining how far it might be possible to cross varieties, and yet evade its general effects and natural consequences, retarding, in as great a degree as possible, the progress of degeneracy that crossing must inevitably cause :—

Relations, such as brother and sister, are never to be mated together; rapid decline, and eventual annihilation, will assuredly ensue from "breeding in" with them. It is better, therefore, to pair the hen and her cockerel, or a pullet with her sire; for there the consanguinity is partly diverted, as the sire and mother may be of different strains; and so the pullets will not be entirely of the same blood as that in the veins of the parent cock; nor is the blood in the cockerels entirely the same as that in the parent hen; consequently, pullets may be taken of the sire's side, and paired with the young male birds descended from the first hen; then from such issue, the pullets may pair with the grandsire, and the stags (or one year old cocks) with the grandam.

Be it distinctly understood, however, that such practices are not by any means commended, except in cases where it has been determined, from urgent motives, to breed "in and in." Prize birds cannot be expected from such unions. Fresh blood should be imported, if possible, to avoid the degeneracy of stock.

For breeding purposes—as will be more diffusively stated in that portion of this work which will be allotted to general management,—a Shanghae cock, when prizes are the object, should not have more than four mates; indeed, where

degeneracy has begun in any degree, two mates will be sufficient for him; and in such case, the best qualities of the degenerating fowl may be restored.

In strict propriety new blood should be introduced every alternate year into the general stock. In breeding from young pullets, the cock mated should be about three years old; and we do not recommend the setting of the pullet's first clutch of eggs, which are generally very small. And young male birds should be paired with hens of mature age.

To farmers and extensive breeders of poultry, who possess large heterogeneous stocks of fowls, but who, from various reasons, may be unwilling to renew their old stock with fresher strains, we would emphatically recommend one of the following methods: namely, either to kill off all the old cocks and replace them with a few good Shanghae cocks, or else select some of their first-rate hens, and place them with an unblemished Shanghae cock; all their eggs then should be put aside for setting, and the results will be beneficial. Their small varieties will then be superseded by a strong, hardy, easily-fattened, and more abundantly egg-producing stock. Most of the excellent qualities of the Shanghae will in such offspring be undoubtedly exhibited, and a most ample quick return of capital invested in them will be the inevitable result. It is obvious, however, that this suggestion is for practical economy and gain, and that fancy or prize birds are out of the question in such case. The experiments made in crossing various breeds with Shanghaes show that the Dorkings are the best for the purposes of profit; at the same time there really is no class of fowls which may not be, for profit, immensely benefited by crossing with Shanghaes.

These being a hardy race, are subject to few diseases. It is seldom affected by roup, or croup; for which reason, even setting aside the merits on which we have been dwelling,

their introduction to this country has been a valuable boon. They have a farther claim, too, on our regard; namely, the propitious coincidence that their arrival has signalized an epoch whence we may date those general, simultaneous, and successful efforts, which are now bidding fair to render poultry one of the staple productions of the United Kingdom. In general estimation, poultry will shortly stand almost as proudly, and proportionably as high in national importance, as cattle, sheep, and swine, which the rare skill, sagacious management, and indomitable perseverance of British agriculturists have rendered so eminent and perfect. Those who have produced such results have just claims to be considered the pride and boast of Britain, the admiration of the world, and patterns to agriculturists of every clime.

The fowls under our immediate observations are good feeders; but being deficient in agility, and of quiet, easy tempers, they have but a poor chance of thriving if forced to turn up the earth to find their food, or at their regular meal-times scramble for it. The Malays and smaller tribes fat more quickly; therefore, when Shanghaes are kept with other fowls of such activity in eating, care should be taken that they receive their due allowance, or they will fall off in condition. The food that answers for other fowls is equally agreeable and beneficial to them, if they can get enough of it.

Contrary to the habits of many other fowls, it is rare for this family to seek secret corners for laying their eggs in. We have known them frequently to be perfectly satisfied with the bare hard ground for this operation. Nor are they at all fastidious as to the places where they hatch. This apparent indifference to matters which agitate the minds of hens of other sorts, arises from their natural indolence, otherwise they would not remain contented under uncomfortable circumstances; but it is unwise and cruel to take advantage

of their calmness of disposition and not provide them with the same accommodation that we afford to others.

It will have been seen from the engraving that the chief difference in form between the eggs laid by the Shanghae and other fowls is, that one end is so considerably more obtuse than in eggs generally. But this obtuseness does not sufficiently characterize *all* Shanghae eggs; some differ in their form so little from the eggs of other fowls, that it requires a keen and practised eye to say with certainty, from form alone,—in instances where the peculiar bluntness is but very slightly marked—whether or not such and such eggs are from the Shanghae. A certain strong and general distinctive mark, however, is, that their eggs are highly granulated, their surfaces being completely dotted over with minute and white spots. This remark is not useless, since eggs have in some instances been sold for theirs, which were only common ones, but tinted to the peculiar colour of the genuine egg.

In common with all fowl, Shanghaes are liable to corns. These are often occasioned by their having nothing softer than gravel at any time for walking on. To this hard surface, good in its proper place, these fowls must not be confined; it is necessary that a portion of their "run" should be a plot of grass. Let them be properly provided with a moderate grass-run, and corns will seldom grow beneath their feet. We have said "seldom," for there is another cause whence these corns may spring; and that is, perching too high. Compel them to descend from such a height as brings their weight heavily upon the ground, and those excrescences will soon appear upon their feet. Elsewhere we have deprecated high roosts for them. When hammocks are discovered to be most convenient dormitories for our aldermen, then Shanghaes may be compelled to perch on elevated roosts.

Some persons who rear Shanghaes are much alarmed on account of the peculiar barrenness of feather which attends the chickens if they be hatched late in the season. This barrenness, however, need not occasion alarm. We have before remarked upon the natural backwardness of feather in the young Shanghae; where the chickens are in an evidently healthy state, their deficiency of outward covering only shows the inconvenience in this respect that will follow from hatching at a period when the season is advanced. These observations must not be considered to apply in cases where disease has caused the feather to fall off: when such, however, is the condition, the symptoms will not be confined to this deficiency; but as disease, of which a dropping off of feather is a consequence, is incidental to all classes of our domestic fowl, that portion of the subject must be reserved for that part of this work in which their diseases will be specially treated of.

A symptomatic disorder of some considerable frequency in this breed is, the "white-speckled comb," the ordinary appearances of which consist in small white spots scattered in patches on the surface of the comb. It may be induced by any cause creating costiveness, a state of body the Shanghaes are somewhat liable to fall into.

Another disorder, "rupture of the foot," which has sometimes affected them, requires some especial remarks. This wound, for such it in reality is, originates in the following circumstances.

In Hong-Kong, Shanghae, and the other provinces of China, the colour of this fowl is utterly disregarded, "buffs" and "cinnamons" being almost unknown. In England, on the contrary, these colours are especially the fancy, and the rage for them induces some dishonest dealers to resort to stratagem, when unable to procure the true specimen, for

the purpose of furnishing a supply sufficient for the demands of the market. The fraud is this :—

The lightest-coloured Shanghae cocks are selected, especial preference being given to such as do not exhibit any trace of black upon the neck-hackle; and these are matched with first-rate "squatty" white Dorking hens, the result of the cross being that some of the chicks take after the Dorking mother, others after the Shanghae father. Some again resemble the mother in respect to colour, while assuming the form and character of the Shanghae sire (these latter are particular favourites); the remainder will appear of an undetermined mixed feather, with some distinctions inherited indifferently from both parents. The favourites are again mated with Shanghaes, and upon the authority of several distinguished breeders, it may be vouched as fact, that from the proceeds of these, beautiful "buff" and "cinnamon" specimens are obtained.

Absence of colour in the white Dorking hen tends to diminish colour in the produce of the union between her and the Shanghae cock, which by degrees shades down to that pale tint so much admired. But it so happens, in certain instances, that these fictitious birds will show the extra claw of the Dorking breed; to obviate this difficulty, the obnoxious member is amputated within a few days of hatching, and to this circumstance is to be attributed the wound or outbreak of which we are treating.

Generally the wound is quickly healed, as are most injuries received by birds upon their pedal limbs, but occasionally, the deprivation of this claw is not effected without some hurtful results; the wound breaks out after the cut has been apparently healed, and assumes the form of ulcerated scales.

In one case, out of several communicated to us, the bird is

represented to have been purchased before the age of three months, at which time it seemed to be perfectly well, and sound upon its legs. In about four weeks symptoms of lameness began to be exhibited, which continued and increased during the succeeding month, and by that time a wound appeared upon the shank, over the fourth claw. Upon examination, only one leg seemed to be suffering absolute injuries, whilst the lameness apparent in the other was nevertheless much more observable, and at the expiration of three weeks both shanks exhibited the "breaking out," which spread also considerably upward.

Now breeders would not thus cut and mutilate the bird in so unnecessary a manner if they and the public were aware that the extra claw is to be found even in fowls imported direct from Shanghae, besides in numerous bare-legged but first-rate birds brought from Hong-Kong and other parts of China.

We shall compare the Cochins with some other breeds most distinguished as good profitable stock, without estimating them as fancy birds. The tables, arranged from a mass of evidence respecting the actual cost of food, and the number of eggs laid by the respective pullets and hens here registered, will afford some practical information. In April, 1851, there were selected from one hatch of the several classes enumerated, four pullets of each class, and of the purest breeds.

TABLE I.

TABLE I.

Hatched April 10, 1851.	When began to lay. 1851.	Number of eggs laid to April 10, 1852.	Average weight of Eggs, each.	Number laid from April 10, 1852, to April 10, 1853.	Average weight of Eggs, each.	Total No. of Eggs laid during the two years.	Total weight of Eggs.	Price per hundred realized at market.	Total value obtained.
			oz.		oz.		oz.	s. d.	£. s. d.
4 Shanghaes	Oct. 19	709	1¾	1059	2⅓	1768	3569	5 6	4 17 3
4 Spanish ..	Dec. 7	452	2	928	2¾	1380	3456	6 0	4 2 9
4 Dorking..	Dec. 1	471	1¾	969	2¼	1440	3004	5 6	3 19 1
4 Polish ..	Nov. 26	512	1¾	885	2⅓	1397	2961	5 6	3 16 9
								£	16 15 10

It will be seen from the foregoing Table, that in the first year of this trial the Shanghaes surpassed all their competitors.

One reason for this was, that they began to lay much earlier, though, certainly throughout the entire race they still exceeded all the others in fertility. It was, however, more in the number of their eggs, than in the total weight of them.

This is not more than half the question necessary to be discussed, viz.: the relative cost of food for the four kinds, which must have its share of weight in balancing accounts. This section of the subject will be best displayed in the following Table:—

[TABLE II.

TABLE II.

EXPENSES ATTENDANT UPON KEEPING TWENTY FOWLS FOR, AND THE AMOUNT REALIZED BY THE SALE OF EGGS DURING, TWO YEARS.

	Cost per week per head.	Aggregate cost.	Cash produced by sale of eggs.	Net profit.
		£. s. d.	£. s. d.	£. s. d.
4 Shanghae hens and 1 Shanghae cock	1½d.	3 5 0	4 17 3	1 12 3
4 Spanish hens and 1 Spanish cock ...	1½d.	2 14 2	4 2 9	1 8 7
4 Dorking hens and 1 Dorking cock ..	1½d.	2 14 2	3 19 1	1 4 11
4 Polish hens and 1 Polish cock	1½d.	2 11 11	3 16 9	1 4 10
	Total	11 5 3	16 15 10	5 10 7

Upon examination of the foregoing details, it would appear that the profit upon these fowls was miserably small, after two years of trouble and expense, besides risk of loss from casualties. But we do not in this example propound rules for the disposal of poultry or their produce. Many persons require eggs for home consumption only—others find it profitable to sell the eggs as "new laid;" but, in the case in question, the fairest course to be pursued, in coming to a just conclusion on the *comparative* worth of the four great classes before us, as *laying* stock, was, selling the eggs at market in bulk.

With each separate class, was kept a cock, making four cocks to sixteen hens; whereas if the sole object be to produce eggs and chickens for culinary purposes, one male bird is enough for, at the least, ten hens; therefore, in calculating the scanty profits in the foregoing experiments, on the mere principle of temporary gain, it must be borne in mind that three more cocks were kept than the case required.

Again—and it is of great importance that these points be

also considered,—although the birds were kept in open, healthy situations, still, being to some extent necessarily penned up—to carry out the experiments upon them—they consequently lived in sole dependence on the food given to them. In farm-yards, along lanes and fields, and many places where poultry can find some means of sustenance, their cost in keep is obviously less; therefore that portion of the case resolves itself into this, that the greater or the less profit poultry yields, is regulated by the circumstances under which they are kept. If disposed of by the bulk at market, new-laid eggs will not obtain a much better price than any others; whereas by retailing them while new, or selling them for hatching, double that price may be obtained for them. But, we repeat, the fowls in question were retained for a special purpose, and as their habits, with their different appetites for food, were held in equal and due consideration, an absolutely fair test was afforded whence to draw correct conclusions on their relative merits as layers.

Premising this, we advance upon another aspect which the question bears. It will be seen, by reference to Table I., that the Shanghaes began to lay—as generally is the case—five or six weeks before their rivals; and by the time they all arrived at twelve months old, these Chinese had produced a greater quantity of eggs by far than any of the others. During the second year, however, the Spanish increased their proportion so, that the difference of weight of eggs between them and the Shanghaes, was only twenty-eight ounces and a fraction in favour of the latter; and as the cost of food for these was, in round numbers, half a guinea less than that expended on the former—while the eggs produced by the Shanghaes, realized but fourteen shillings and sixpence beyond the amount from the Spanish, —the final difference between the two, during two years, was inconsiderable.

From the table it appears that, throughout their first year's laying, the Shanghaes outstripped all their competitors, but that, in the second year, although they were still in advance, the Spanish gained upon them so considerably as to reduce the difference to trifling odds. Upon a run of two consecutive years, these two prime rival breeds were nearly equal; and if we go deeper into the question of the comparative intrinsic value of the respective layings, it then becomes a matter of the utmost nicety to ay which has the advantage. The extra profit on the Shanghaes arose from this, that only sixpence difference of price was obtained upon each hundred eggs when sold at market; but if common sense could regulate the mode of trading in eggs, and weight were made to govern their market value, then a different result might have occurred. Any one who examines the tables, can pursue the comparison with either or both of the other two breeds entered in them.

From what has been shown, it appears that Shanghaes should be placed but second in the rank of egg-producing stock. When every point shall have been fairly poised, and a just standard fixed,—whether this breed will take precedence of all useful fowl, or share our favour with others, is another consideration.

The first thing in their favour is the circumstance that where the object sought in keeping poultry is, to obtain eggs for market, in which case the greatest number is the greatest good, such object may be best obtained by rearing Shanghaes, but only keeping them until they have attained to two or, at the utmost, to three years of age. Although by that time they will have become somewhat too old for the table, they have, meantime, yielded handsome profits on their cost.

In instances where space for poultry is but limited, our Chinese family are found convenient guests; they can put

up with worse accommodation, and require less space than almost any other race. We do not mean to say that they will thrive the better for confinement, neither that fowls in general will pine and die if kept within a narrow range: all fowls are better for having ample space; but in cases where their liberties are necessarily abridged, and more careful tending is required to counterbalance want of field-room, the Cochin can bear captivity better than any other fowl.

Another favourable point in Cochins is, that in seasons when new-laid eggs are rare, and from their scarcity of so much increased value, this species often proves a source from whence we can obtain supplies.

If the size of the eggs be the principal object, the Spanish fowl must have the preference. In this case numbers are not so much an object to be sought as superior weight of individual eggs. An egg of moderate size, sells, we shall suppose, for three halfpence, but if a little larger, twopence may be obtained for it—or twenty per cent. more; size, in such instance, is of greater consequence than merely numbers.

So after all it can only be determined by the peculiar circumstances under which these rival candidates stand in their relations to our several interests, which of the two shall get the greater share of votes in the election for a poultry queen.

Some breeders of Shanghaes are much alarmed about them when perceiving the peculiar barrenness of feather which affects chickens when hatched late in the season. This nakedness, however, need not occasion uneasy anticipations. We have before remarked upon the backwardness of feathering in the young birds of this tribe; but if they be in a healthy state, this deficiency need not be viewed as more than a practical hint of the consequences that will follow from

hatching at too advanced a period of the season. These observations, however, are not intended to apply to cases in which disease causes the feathers to fall off. When such is the condition, the symptoms will not be confined to want of feathers; but as malady, accompanied by a dropping off of feathers, is incidental to all classes of our fowls, this point must be reserved for the concluding portion of this work, which will treat of their ailments in detail.

We have already cursorily mentioned the symptomatic disorder of some frequency in the Shanghaes, which is termed the "white speckled comb," which gives to the suffering bird somewhat of a leprous appearance, as the disorder soon spreads all over the neck, and causes the feathers to fall from it. It neither spares the young nor the old birds. Mr. Tegetmeier is of opinion, that mild attacks will yield to the application of turmeric mixed with cocoa-nut oil, in the proportion of one part of the former to eight of the latter. However, this ailment is not, as is usually supposed, merely local; consequently, it is useless to confine the treatment for it to the affected part, since the incipient cause is lurking elsewhere. The appearances about the comb are occasioned by excessive internal inflammation, arising from too stimulating food, or some of those various causes which engender a diseased state of the body. It may arise from uncleanliness, bad water, or any diet creating costiveness, to which Cochins are very liable. This foul condition will first exhibit its influence upon the comb; but if severe, will spread, and in the sequel rot the feathers, which drop in bunches from the bird.

In this disease, from whatever source arising, the outward application is a very uncertain remedy; though we are aware of its sanative properties on the human frame in some of the warm Eastern countries, we think that the recovery of the diseased bird is more attributable to the general treatment

pursued, than to the local application of the particular oil recommended as a specific, with the concurring aid of nature effecting a more healthful state of the bodily system. External applications appear to us as useless, except as auxiliary emollients following other remedies, when the predisposing causes have ceased.

The principal occasion of the white comb is considered to be an incipient state of either apoplexy or paralysis, to which these fowls have so much tendency, from their full feeding and general habits of indolence. Therefore, as a diet for them, green food of any kind is good, mixed with middlings and such like substances; whilst peas and beans, which are very astringent and heating, are not only bad in general, but may of themselves bring on those dangerous disorders.

Any one who observes these birds feeding, will be struck by the voracity with which they deeply dip their beaks, if permitted, into any vessel in which grain is offered to them. Instead of picking up grains as other fowls do, one by one from the ground, they are always disposed to swallow their corn in large quantities, and as quickly as possible. They remind one of a hungry horse, which having got loose, buries his nose in an open oat-bin, and bolts the corn without masticating it.

Shanghaes, too, when kept fasting longer than their usual time, may, if fed with dry corn too abundantly, be affected with indigestion, an immediate result of which is, that the crop will become distended by the swelling of the grain. When this occurs, care should be taken that the next meal shall consist only of a small quantity of soft food, such as meal, &c. If this simple and relaxing dietary should not avail, ten grains of jalap may be administered in the form of a pill; but drugs should only be resorted to in obstinate cases. In administering this medicine, we recommend that it should be mixed with a very small portion of some tempting food, in

order that it may be so effectually swallowed that it cannot be rejected. But after all, the most certain and quickest mode of administering the relief is to catch the patient, open its beak, and put a pill or bolus down its throat with the finger.

A full-grown Cochin will consume at least a gallon of barley in ten or eleven days; but a continuance of such an allowance would not be good. Alteratives and varied diet are much better for all fowls, as will be the subject of detail hereafter.

If you must resort to medicine, give a tea-spoonful of castor-oil as the best remedy.

The above complaints are by no means, however, peculiar to Cochin fowls, nor is the "twisted tail," which is also ranked as a malady. All fowls are subject to this malformation, and some more than the Shanghaes. It is an organic disease taking a local form, its name indicating the appearance it produces.

Fowls confined to limits insufficient to afford that amount of vigorous exertion which instinct urges most animals to take when left unconstrained, are very apt, while young, to abuse their privilege by running about so incessantly as to exert too great a strain upon the tail, when balancing the body over rough ground; and the result is often an unfortunate sprain, technically termed "twisted tail."

We shall here observe, that though the Cochins are very patient in confinement, they, like all other fowls, should be allowed to enjoy the utmost amount of exercise that circumstances will admit of, not as a mere enjoyment now and then but as a constant daily practice. We may, perhaps, elsewhere enlarge upon the reasons that can be assigned for this. In the mean time let the reader act upon our suggestion, as calculated to insure to his poultry both good feather and sound health.

We cannot dismiss this really amiable and interesting

family without a few more remarks on their dispositions, which have endeared them exceedingly to those of their human friends who are best acquainted with their habits and tempers.

Both sexes are remarkable for their placidity and patience. It was but the other evening that we had occasion to remark this, under circumstances which would have called for impatience and anger in other fowls. A well-grown pullet had just settled herself for the repose of night, but not closed her eyelids in sleep. To our rather rough handling and critical examination of her figure and dress, she offered no resistance, manifested no sense of annoyance; the mild bland eye seemed hardly to glance a reproach, or to convey even the natural remonstrance, "Why will you not let me sleep?" It was rather expressive of tenderness and submissive respect; the hand of the feeder and the friend was recognised; and the dear bird looked as if she wished to have given a responsive pressure to that of our hand; but the claw was not raised for this purpose, and we were quite satisfied to escape the sort of clawing which our disturbing visit perhaps merited. Nor was there any sound of fretfulness uttered by this placid bird, nor by those of her family who were lookers on, and equally disturbed by our unseasonable obtrusion on the hour of retirement. Many a hen under such provoking treatment, or without any provocation, would have uttered

> ——— "A screaming sound,
> As of a dame distressed, who cried for aid,
> And filled with loud laments the secret shade;"

but our young hen uttered but a low murmuring sound,

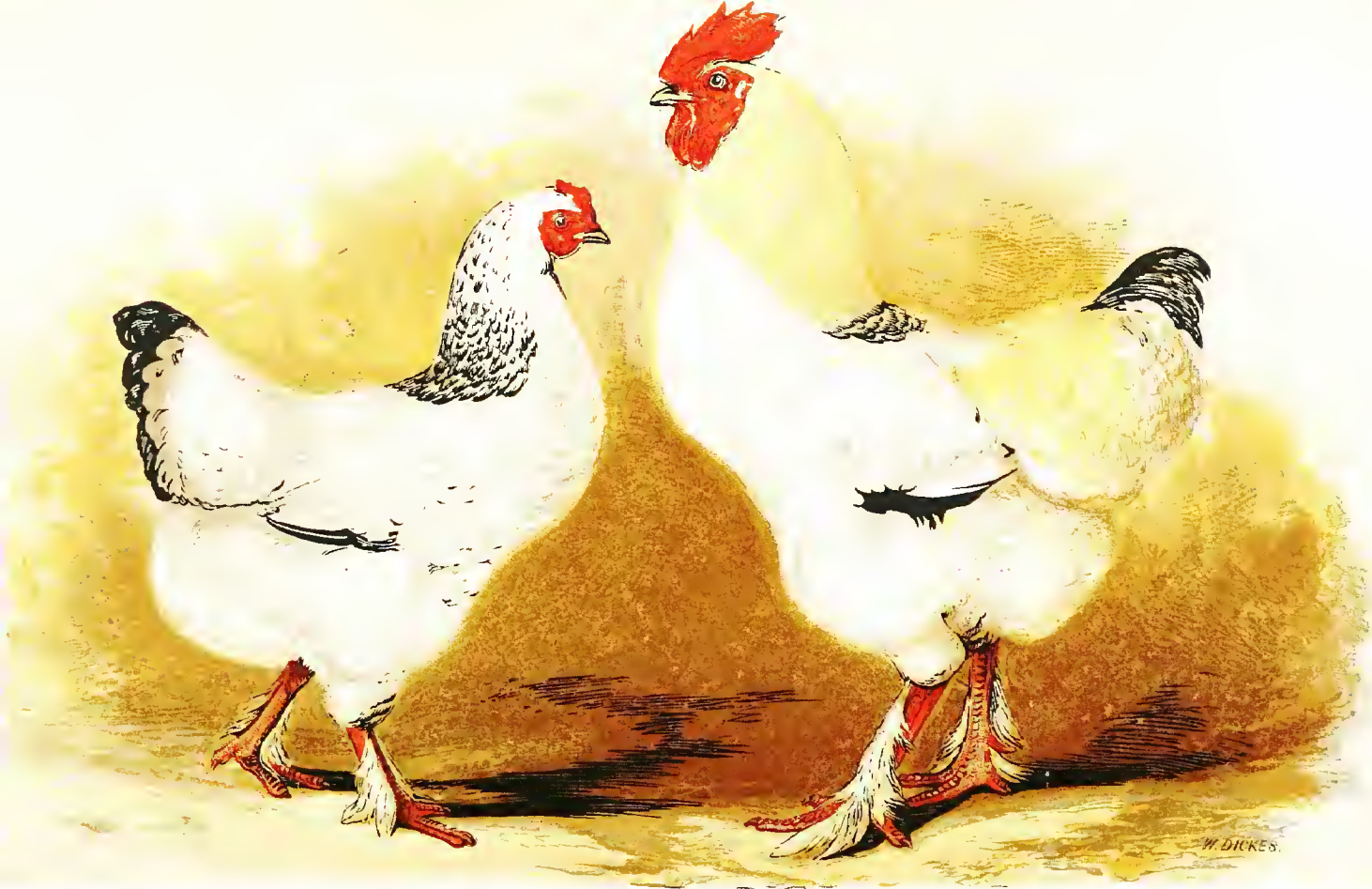
> ——— "So soft, so clear,
> The *poulterer* held his breath to hear."

The male bird too has his amiabilities. He is so affectionately uxorious, though polygamous (which fowls in their

primitive condition undoubtedly were not), that he may be seen contemplating the laying hen with the most touching interest, even going in and out of the nest as though preparing it for her accommodation; and when she enters it, he mounts guard beside her, chuckling his guttural but joyous whisperings into her ear until the moment that she rises, when he departs with loud and triumphant acclamations, proclaiming far and near, and wide as echo's reach, his hen's accomplishment of her pleasing labour.

The Shanghae males are especially gifted with the happy art of softening the asperities of temper, and of winning the love of females the wildest and the most indifferent, as hens sometimes will be, to the wooing of their mates. They seldom or never court in vain. There is a fascination in their bright, good-tempered eye, and a captivating influence in their manners, which gain upon the affections of even the most unsocial and intractable of hens. For instance, a hen —of what breed it matters not—was, from her wild and savage disposition, the abhorrence of both sexes of fowls in a poultry-yard, and she cordially reciprocated their dislike: between herself and every fowl about the place, the most decided antipathies existed. Every ordinary suitor who came near her, was dismissed in the most insulting manner, ruffled in their tempers as in their feathers; but mark the sequel.

A Petruchio who arrived from China, with boot hose of the most approved fashion, and to say the truth, strutting in a very uncourtly manner, and without those flowing and plumed robes which have such an imposing appearance among chanticleers of fashion generally, made his advances to this Catherine. At first they were received in her usual style; she looked as if she would have clawed his comb for him; in short, she was as vixenish as any female could be; but the other, cool, unimpassioned, yet resolute, was not to be baffled; his apparently mock politeness first mortified her pride;



BRAMAH POOTRA.

then his assumed carelessness wounded her vanity; and while her displeasure and flurry were subsiding, she, imperceptibly to herself, found that the limits between them were narrowing, until without affording her the least pretext for flying into a passion, he came within ogling distance of her, and she could not resist the sweet and bewitching influences of his look, for

> "There was a thief in that fine eye,
> That stole her heart away."

But the much greater weight of the Shanghaes tells in their favour. We cannot avoid coming to the conclusion that their weights at all ages have been under-estimated in some of the various lists now before us.

We see Cochin China cocks of eighteen months, rated only from six to seven pounds weight, and hens from four and a half to five pounds. No doubt Mr. Baker can turn out of his establishment birds much heavier. We have this day handled cockerels, of ten months old, weighing thirteen pounds, and two of our own pullets of the same age weigh upwards of seven pounds each; and these are but ordinary specimens of well-bred birds.

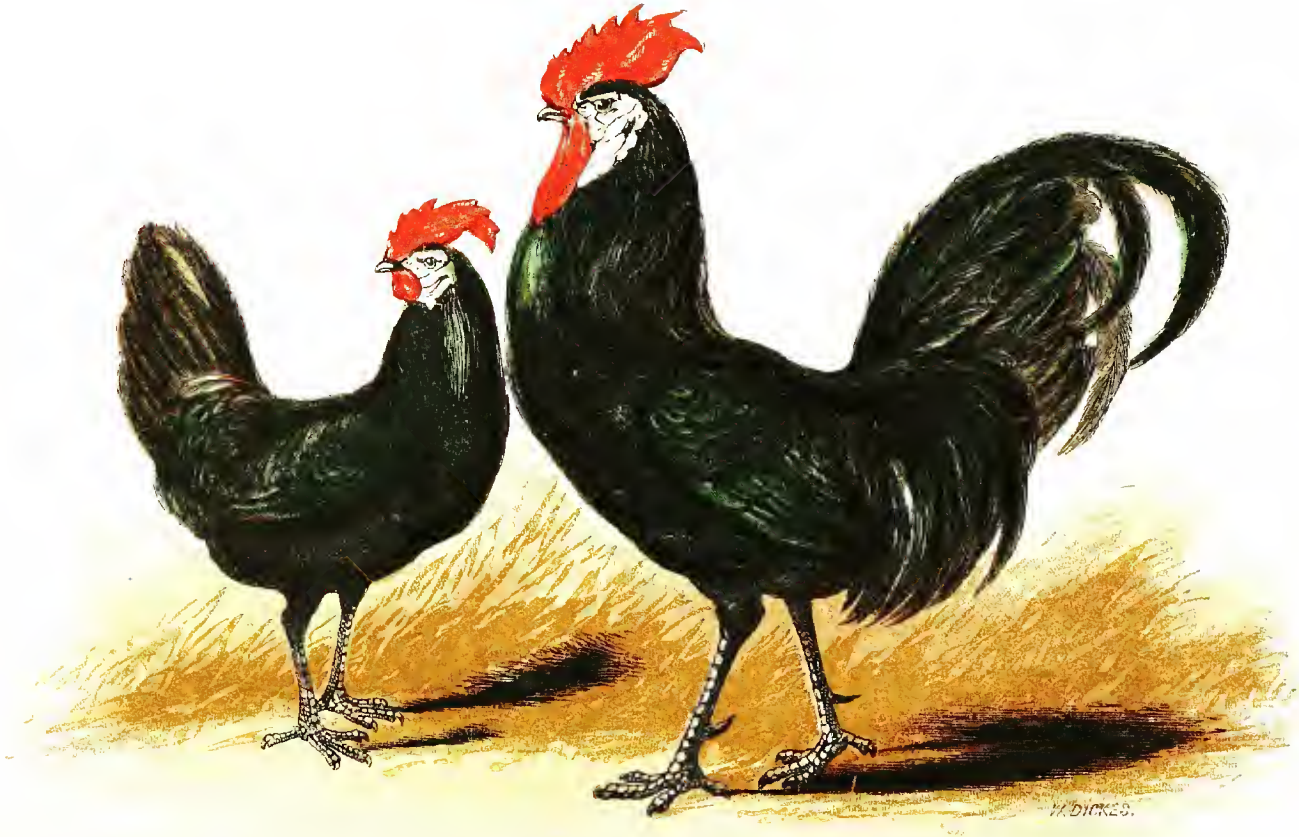
Dorking and Pheasant Malay cocks are rated at seven pounds also (as the maximum), but the weights of the Spanish are over-estimated relatively with those of the Cochins.

The Brahma-Poutras.—These our newest acquaintances are, or we think will be soon, generally admitted to be of Asiatic, not American origin, and in reality no other than a very beautiful and improved variety of the Shanghaes; though where or how this branch of the family first appeared as one of "the orders grey," is not quite determined. They are yet too scarce to have entered into our private possession, and as to tasting their flesh,—an experiment which we long

to make—such an extravagance has not yet been committed in this country.

Until we shall know more about them, we can only quote the description which an accurate observer has given of the pair sent to this country from America by Doctor Bennett. The height of the cock is two feet three inches, the girth around the body over the wings, one foot ten inches. The head is surmounted with a very small triple rose comb, or as it is termed in America, a pea comb. Single-combed varieties also exist, but they are less esteemed. Another peculiarity is a well-marked line of distinction between the back of the head and neck; the tail is small, consisting of scimitar-shaped feathers, and is carried uprightly; the legs are strong and muscular, and the shallow shanks feathered to the toes. The colour of the body is white, with the slightest possible tinge of gold, the hackle being dark grey, and the primary wing-feathers and tail glossy black, with the resplendent tints of green seen in the true-bred Spanish. The hen is of a proportionate size, and matches in colour; the hackle, wings, and tail being dark grey, the latter being also more developed than in the ordinary Cochins. The Bramahs have the reputation in the States of far surpassing the Cochins as layers, and of being most excellent mothers, in which particulars Mr. Sheehan informs us they excel. Their eggs are of fair average size, namely, about three ounces; and those he has seen are nearly as light as those of ordinary hens. The chickens are remarkably hardy, of rapid growth; they feather quickly, and in plumage and colour most closely resemble the parent birds—a circumstance which goes very far to prove that they are a distinct variety from the Cochins, as the fact that the latter cannot be bred true to colour is well known.*

* "Profitable Poultry."



SPANISH FOWL.

The Spanish Fowl.

The Sonnerat Jungle cock of the southern part of the peninsula of India, of which a very beautiful specimen may be seen in the British Museum, and the Bengal Jungle fowl of the north of Hindostan, which may also be seen in the same collection, have been severally reputed by naturalists to have been the earliest progenitors of the Spanish, as also of other domesticated species. The white cheek which marks the Spanish, is also possessed by the Bengal Jungle fowl, and by this alone of all the wild sorts.

This remarkable coincidence of "cheek lappet" suggests theories in respect to the local origin of the Spanish kind, and the name and character of their first parents; but they are theories incapable of demonstrative proof. And it is not to be denied that those types from which our domesticated sorts are said to have proceeded, are yet undefined.

The true derivation of our tame fowls from wild cocks, has always been a stumbling-block to naturalists. "Those authors," says Mr. Dixon, "who, by a pleasant legerdemain, so easily transform one of the wild Indian *galli* into a barn-door fowl; who put the Jungle cock, the Bankiva cock, or the *Gallus giganteus** under a bushel, hocus-pocus a little, lift up the cover, and then exhibit a veritable chanticleer, write as if they had only to catch a wild bird in the woods, turn it into a court-yard for a week or two, and make it straightway

* Jago, the native Sumatran or Malay word for a particular breed, has been mistaken for St. Jago (by a misquotation from Marsden), the name of one of the Cape de Verde Islands.

become as tame as a spaniel. A difficulty which speaks volumes, is, that those birds which have been pointed out as the most probable ancestors of the domestic fowl, do not appear to be more tameable than the Partridge or the Golden Pheasant: moreover, so remarkable an appendage as the horny expansion of the feather-stem, as seen in the Sonnerat cock, would, according to what is generally supposed to take place, be increased rather than diminished and obliterated by domestication; and even if got rid of by any course of breeding for a few generations, would be sure ultimately to re-appear."

Yet our domesticated fowls must have had some progenitors. The Game fowl are strikingly like the Sonnerat cock in form, and even in plumage; they also have strong resemblance to the Jungle fowl; but for our Spanish what shall we say? In short, what their progenitors, or those of any of our varieties (we are inclined to except the Game breeds and the Malay as more easily traceable), exactly were is a secret beyond human reach. Who can connect the several links by which the domesticated races throughout the world may have been derived from the wild races now existing in very few numbers?

The utter impracticability of such an attempt will appear from the well-known fact, that it is very difficult to establish any permanent race even among nearly-allied varieties. After a few generations, the original characters of the first parents break forth, and the new cross vanishes or becomes imperfect in various ways; and the resemblances to the actual parents are lost in the likeness of the remote ones. "People fancy," observes Mr. Dixon, to whom we are indebted for the foregoing deduction, "that crossings and intermixtures may be infinitely multiplied and continued, restricted only by the algebraic law of permutation and combination; and such is the current opinion among many who are

accustomed to see the diverse colours and appearance of fowls promiscuously bred in a farm-yard; but the observant breeder knows that such is not the case."

The same critical annotator dwelling upon the permanency of species and varieties, that the individuals are not ever changing with circumstances—opposing the axiom, "like begets like"—doubts the fact of progressive development;* and in illustration of his argument, mentions that the varieties of fowls were as numerous before the Christian era as now, and probably identical with what we have at this day. Columella is quoted as recommending those that have *five* toes and *white* ears, the marks of our Dorkings and Spanish; and as noticing the pugnacious propensities and peculiar habits of others, which continue to characterize some breeds, as that of the Bantams, in our day.

Now may we not, notwithstanding this, venture to point to the improvements, in many essential particulars, which have been effected by the breeders of prize birds? Do we not frequently hear and read of marked improvements which have been made in the different classes of Poultry, of points more developed,—in short, of positive improvements?

Does not the experience of every producer of prize agricultural stock prove progressive improvement and changes in the form and symmetry of animals, to be realities?

We are almost inclined to think that we may have misunderstood the author before us, who certainly is no dealer in paradoxes for the sake of displaying ingenuity in argument, and confounding though not convincing; and we cordially concur in the following sentiment, with the reservation, that though we cannot create anything, it is given to us to improve in some measure, and in subserviency to their designed purpose, creatures and things that have been created

* Or, what is the same thing, says that "in the case of fowls, the theory of progressive development and change is unsupported by evidence."

for our use. "We maintain unhesitatingly, that it was not man or his domestication, or any inherent tendency in the creatures themselves, that gave feathered crests to the Poland fowl; dwarfed the Bantam; expanded the Dorking; enlarged the Malay and Cochin China fowl; inspired courage to the Game cock; or made the hen, next to woman, the most exemplary of mothers, unless we believe it was man who enlarged the strata in the ribs of the earth, and prescribed to the sea its everchanging boundaries. Man is powerful to have dominion, God alone is potent to create."

We have now to individualize the Spanish race, which is one of those permanent ones to which the attention of the amateur of poultry has long been directed; and which on many recent great gatherings of fowls before the British public, has been allowed to precede the more useful and profitable Cochins and Dorkings.

As master of the ceremonies here, we must declare all that we can of the birth, parentage, and education of these dignified creatures.

"It would be useful," says Buffon, "to delineate for the cock, as I have done in the instance of the dog, a kind of genealogical tree of all his races, which would exhibit the primitive root and its different branches, represent the different natural processes through which alterations have been, and the changes, effected in their conditions; but for this purpose more accurate details than we generally find in most comparisons would be requisite. Among the great number of different races which the cock species presents to us, how shall we discover the primitive stock? So many circumstances have exercised an influence on these varieties, so many fortuitous causes have concurred to produce them, even the zealous care and capriciousness of men have so multiplied them, that it would be extremely difficult to trace them back to their original root, and to recognise in our

poultry-yards, nature's fowl, or even that of our own climates." What Buffon did not attempt to do, we shall be excused from aiming at, and we must even leave the Spanish cock, like the Hidalgos of his country, to claim an ancestry extending from the present period to that in which Noah took fowls into the ark. This stately, and indeed noble bird, would have reason to complain of our having given precedence to any other family of his natural order, if he could make out a clear title to the name he bears, as of great antiquity—but this he cannot do.

Before entering upon the subject of the peculiar characteristics possessed by this much-prized fowl, we shall institute a preliminary inquiry as to the causes whence it has derived so definite a geographical name, seeing that not in Spain alone, but throughout vast regions outspreading towards the eastern and northern parts of Europe, extensive flocks of fowl belonging to this class are naturalized and reared. Why Spain should be thus honoured with the exclusive privilege of furnishing a patronymic for this bird, becomes a legitimate subject for investigation, now that the claims of Cochin China to give name to our volucrine immigrants from the East have been so strongly asserted, but, we must add, so reasonably rejected in favour of Shanghae—no mean portion of the Celestial empire.

The fowl called *Spanish* is not an aboriginal of Spain, but was imported into that country either from some portion of the East, through the Mediterranean, or, as has been affirmed, from the West Indies, by Spanish merchants, and subsequently propagated and naturalized in Spain. Thence European countries were stocked. The name is therefore a misnomer. Those birds differed from the present Spanish, in having a smaller and less white face, and darker feet and shanks. We find that previously to the introduction of the bird in question, a diminutive species, known by the name of Manx,

was the common class of fowls reared in Spain; these two breeds were crossed together; varieties were thence raised, and the present sub-varieties of the Spanish fowl are partly the result. In Holland, before the naturalization there of the Spanish fowl, a domesticated bird—in colour a dun, or bluish slate—though much inferior to the other, prevailed; but if we carefully observe the variations in this latter class, it becomes evident that such differences are the results of admixture with the primitive breed.

Of first-rate specimens, Spain at the present day can make but little boast, though from the Netherlands may be obtained birds of the greatest beauty as to form and feather, and of the highest value as regards quality and breed. And though Holland was originally supplied by Spain, the mixed varieties previously propagated in the latter country were quite sufficient to produce in time a cross and mixture which defies all effort to detect in them any resemblance to the original stock, unless by a person acquainted intimately with the nature, form, and habits of the bird.

The Spanish fowl has long been naturalized in Great Britain with great success; and considering the high perfection it has attained, we are justified in asserting, what has often been advanced, that our climate is as perfectly adapted to the genus "*Gallus*," as any in the world. That the fowls brought from the Indies were primitive breeds, is pretty certain; but that many bearing the name of Spanish, though far from being purely of that breed—possessing neither their beauty nor good qualities,—do in the present day abound, is beyond doubt; yet there are others which, although not literally belonging to the primitive stock, being unquestionably an admixture, are nevertheless upon a perfect footing of equality with it, and if intrinsic value be the criterion of rank, justly deserving by their good qualities the name of Spanish.

In England, the original stock has met with several crosses, more or less resembling one or other of its progenitors, and in course of time a name has been appropriated to these varieties, as though each were a separate species. We shall therefore describe their several peculiarities, although, in consequence of the innumerable crosses that have occurred, it would be impossible to recount the *pedigrees* of such a heterogeneous multitude; for when crosses occur, the form, colour, and general appearance of the individuals of a brood, even of the same blood, differ greatly from each other. There are the Blacks, Anconas, Minorcas, Whites, Tasselled, Andalusian, and Double-combed; besides a sub-variety perfectly black, excepting a little white upon the breast. The cock of this latter sub-variety,—so noble in appearance, so regal in his carriage,—is a very majestic bird; his picturesque and florid comb is of a blood-red colour, and remarkably serrated; a tuft of black fluff covers the ears and part of the face, and behind the comb arises a small tassel; there is also a similar cluster beneath the wattles. The eyes are partially encircled with a few projecting feathers of a brownish hue; the legs are of a dull leaden colour, and the soles of the feet are a decided yellow.

A pair of these birds was imported from Holland by a gentleman who entertains a full conviction of their being an original variety, from his having successfully bred from them for the last four years, and none of the broods so obtained having differed in any respect in form or colour from the parent birds: this appears to prove the probability of his opinion. However, still further to strengthen and confirm such conclusion, let him persist in breeding from this stock for a few years, and if the same success results, it will be very probable that it is an original kind; until then, we must be allowed to retain our opinion, which is, that these will ultimately prove to be merely cross birds. We believe

the Polish fowl has been intermeddling here, since many of its habits and actions are manifest, and it is said that the hens of this supposed variety evince greater inclination to incubate than the genuine Spanish fowl: in this is displayed a strong characteristic of the Polish species when crossed.

The *true Black Spanish* is a most strikingly original and very beautiful bird; one of the few which, without the slightest hesitation, we can affirm to be a really distinct class of domestic fowl. The peculiar characteristics distinguishing them have undoubtedly been much more fully developed by the breeding in and in with such specimens as were of the highest quality; but their ancestors possessed similar peculiarities, although not in so high a degree. We regard the Spanish fowl of the present day as a decided proof of the most careful breeding.

A full-grown black Spanish cock weighs seven pounds; the hen, six pounds. The former stands from twenty-one to twenty-two inches in height (but this has sometimes been exceeded); the latter, about nineteen inches. The principal features, and those which form the most striking contrasts to those of other fowls, are, its complete suit of glossy black, large face, and ear-lobe of white, enlivened by comb and gills of excessive development. The peculiarities of these contrasts induce us to describe them in detail. The plumage is of a rich satin black, reflecting their shades of bluish and greenish purple, when exposed to the sun's rays; the feathers of the breast, belly, and thighs, are black, of the most decided hue. The hens are of a similar feather, but less brilliant. The face and ear-lobes, especially the latter, are of pearly whiteness; the face should extend above the eye, encircle it, and meet the comb; it still increases as the bird grows older, continuing to enlarge in size, especially with hens, which seldom have a really good show of face until two years of age, even beyond the time of their full

growth; and the more face and ear-lobe, the more valuable either the cock or the hen. They should never be found "blushing;" and blushing *hens* should be especially avoided. The comb of the cock should be erect (at all events, the more erect the better) and serrated, almost extending to the nostrils, and of bright scarlet: with hens, this uprightness of comb cannot be attained, owing, not only to its abundant size, but to its thinness at the base, being at that part very slight, compared to the cock's; it should be fine in texture, and exhibit no sign of excrescences. The wattles are singularly long, pendulous, of high colour, and well folded. The head is long, but neat in appearance, and there should be no top-knot behind the comb, neither muff round the neck. The beak is long, and generally black, though towards the middle is often observed a small patch of a lighter hue; it should be slightly curved, and thick at the base. The eyes are very full, bright, and of a rich chocolate or chestnut colour, and not in the least scarlet, nor of a golden yellow; they are somewhat prominent, beautifully suitable to the white face, and harmoniously corresponding with the entire plumage. The neck is rather long, but strong and thick towards the base, the neck hackle being of a glossy black; and if any traces of red or white are visible, the birds so signalized should be excluded with all of the same description from the poultry-yard, and placed at the cook's disposal. The chest and body are broad and black, the former being particularly dark; the wings are of moderate size, and much longer than those of the Shanghae fowl, but shorter than in the Game, whilst the coverts are beautifully shaded, and of a bluish black. The thighs are neat, but long, as also is the shank, which is of a leaden or dark blue colour, yet sometimes of a pale blue-white; but specimens which exhibit dark blue and white on the legs must be dismissed. The soles of the feet are of a dingy flesh-colour; the tail is

rather erect, well balanced and finely adjusted, presenting (if well plumed, as it should be) a very elegant green-hued shade, and sparkling with metallic lustre when exposed to the sun's rays.

The White.—From this variety we have reared the best Spanish specimens: they inherit the usual qualities and peculiarities of the Black, but the general feather being, as the face, perfectly white, they present no strong reflections of light and shade, as do the Blacks, and none of that strong contrast, for which these are peculiarly distinguished. When kept in good airy and healthy situations, they have, however, a very delicate and pleasing appearance; and it should be remembered that some fanciers do not admire strong contrasts, but prefer a subdued and settled delicacy, especially, as in the case of these birds, if their milk-white feather is relieved by a healthy vermilion comb, with sparkling joyful eyes: the legs and feet also form a partial relief, from being more or less dark. These birds are not usually so hardy as the Blacks, but are frequently bred from, as well as reared with, the latter.

Blacks bred from Whites are in general as hardy as the primitive variety of Blacks; while the Whites bred from the Blacks are not so hardy as the latter, showing a peculiarity resulting more from colour than constitution. Here we must again pause to make one remark. We have known instances, and therefore can corroborate the testimony of those who have asserted the fact, that the black Spanish fowl has moulted nearly white in plumage, but at the same time has "thrown" black chicks.

We know an experimental and successful breeder of Spanish fowl, who has frequently carried off the "palm of victory" from our poultry-shows, who some years since, for experiment, paired a white Pile Game cock with a Spanish hen, and most of the pullets resulting from this cross resembled

the father, whilst the cockerels more or less took after the mother. Again, he selected from the pullets those most resembling the Spanish, and mated them with one of his own purely black Spanish cocks, from the issue of which he selected the entirely black pullets and bred them with a fine Spanish cock; this was practised for several successive years, until he at length obtained separate prizes for three of the produce as pure Black Spanish. Since that period some white-coloured birds have occasionally appeared in his broods: those which came white from such stock invariably took after the old Pile ancestors, as disturbers of the peace, as well as in constitution, but in no outward respect showing the white face and ear-lobe fully, as in any of the Blacks.

The *Ancona,* of all sub-varieties, show too clearly the results of a cross. There seldom is much white about the face, and in many cases none; the ear-lobe is, however, of that colour, though not so long and full as in the Black. The comb and gills are generally more pendent, and if examined, the former will be found more deeply serrated and thrown towards the base; but they possess the general characteristics of the Spanish class, and are excellent layers. They are of a very unsettled colour, spotted with white; but far from regularly marked: they also present many other shades and colours.

Minorcas are very similar to the last-named tribe, wanting the white face of the Black variety, but having their long and well-covered head and suspended wattles. The ear-lobe is white, but in very few instances is it of a clear shade, but verging towards the side into a somewhat flesh-coloured tint. The shank is not so long as in the true Black, and there is not the especial dignity of bearing so much admired in this variety. They are good layers, but bad sitters and mothers. As they are so common in many of the inland counties, they do not require minute description. In Devonshire

especially, Minorcas are very abundant; but in the majority of instances nothing more can be observed in them than in a common Black fowl; indeed they are rapidly degenerating, little pains being taken to improve, or even keep up the original qualities of the stock.

Captain Hornby speaks of this Minorca variety as having but a *resemblance* to the Spanish, and wanting the white face. And there is little doubt that they are degenerating fast into the black mongrels of the great Spanish family. The Minorcas and common Blacks crossed, will produce a very good egg-laying tribe; better, probably, than some of the very high-bred and pure sorts. But if we be asked the question, generally, can the laying properties of the Spanish be improved by crossing? we must reply, that this is problematical, or rather, improbable; yet, that the Spanish, like the Cochins, will improve other breeds in this respect, by being crossed with them.

A large breed from Constantinople and its eastern boundaries is spoken of as a variety of the Spanish; but we have no satisfactory particulars of it, farther than the brief notice of it in Mr. Dixon's book, which characterizes the hens as having a large flaccid comb, flapping about like a piece of red velvet, and being astonishing layers; and, as a necessary consequence, seldom disposed to brood. Such hens as these would be valuable in an economical view, if Dorkings were kept for hatching duty. The same, indeed, may be said generally of the Spanish varieties. Let them be kept for laying exclusively; and the others for brooding, laying, and furnishing meat for the table. If two kinds only be kept, there could hardly be a better selection than of these two distinguished classes. Inferior crosses from the Spanish are, as we have intimated, very common; and most of the black fowls we see, if they bear any resemblance whatever to the

high family in question, are dignified with the patronymic, however obvious may be their illegitimacy.

The *Andalusian* is unquestionably a cross of the grey *Manx*, which is now rarely seen. When carefully selected, the chicks throw black and white, and if those most resembling the originals are bred together, a neat (grey) bird may be obtained. They are good layers, and far better sitters and mothers than the Blacks, and have shorter shanks; whilst their principal peculiarity consists in a tail standing very erect, the feathers of which in many specimens nearly touch the hackle-feathers of the neck. The Andalusian variety is generally well plumed, and the chickens are quicker in feathering than the Blacks. They are good feeders, and may be very easily and quickly fattened; and the flesh is excellent. The cheek of this fowl is more or less coloured, and from among the same brood of chicks we have invariably found that the darkest birds possess the whitest faces. They are a very hardy fowl, and possess a fair share of the Blacks' good qualities. The Manx is, we repeat, the original domesticated species of Spain: we have seen but one specimen of the class, and believe it to be nearly extinct. They are of a greyish cast of colour, and do not show a white face, but have white ear-lobes, which are rather full, compared with those of other varieties of domestic fowl, although less so than in the Black Spanish. They have a large comb and wattles, are somewhat short about the leg, both in shank and thigh-joint, and are smaller than the present Spanish in body; they exhibit white quills in the wing-feathers.

Mr. John Taylor, who has obtained many prizes for his Andalusians, found great difficulty in procuring pure specimens of them in Spain, where they are extremely scarce. Out of twelve of the best that could be obtained for him and brought to England, there were but three possessing the

true colours and other indications of pure blood. By uniting them with his original stock, a vigorous and improved progeny was raised. Some of the pullets, at an early age, laid eggs weighing three and a half ounces each. He complains, however, that they will occasionally "throw back," from having been long intermixed in Spain. Mr. Taylor notices the important points in this variety, thus:—"Comb large, erect, and evenly serrated; cheek white; legs bluish; plumage bluish grey or dove-colour, each feather being lightly margined with a lighter tint; hackles glossy, velvety black, falling evenly on each side of the breast, in strong contrast to the colour of the latter, but full, carried very uprightly, with the sickle-feathers well arched. The hens have the same colours, but pendent combs. As a table fowl, I have a very high opinion of their excellence, regarding their dark legs as the only point in which they are behind the Dorkings in this respect; but this drawback I have obviated in the case of my white Spanish, having, by careful selection, obtained a stock of pure white fowls, with white legs, which I think, from the size of their eggs and the whiteness of their flesh, are quite equal to the Dorkings. The contrast, also, of their milk-white plumage and scarlet comb, is very pleasing to the eye." Mr. Taylor obtained numerous prizes for these handsome birds.

There are many other sub-varieties, or rather strains, that have crossed with the Spanish stock, but they neither deserve nor possess a distinct name. These are to be found in many of the countries bordering on the Mediterranean Sea; they are scattered throughout inland provinces; and in England there are heterogeneous breeds that have evidently been crossed by Spanish, and bear more or less a resemblance to that fowl, as may be observed in passing through the streets or suburbs of London.

The Columbian, which is in the possession of Mr. Nolan, is

pronounced by him to be "the nearest proximate to the Spanish," but larger and taller, the cock being twenty-two inches, and the hen twenty-three inches in height, and weighing respectively eight, and six pounds and a half, the eggs being "the largest of the whole tribe of fowls;" and, according to their eulogist, they are not only prime layers but good sitters and mothers,—qualities which we have seen are not accorded to the genuine Spanish.

"The plumage of the male bird is black, with metallic lustre; the comb large, serrated, and erect, sometimes double; wattles long; ears, cheeks, and throat, tufted with feathers—no topknot; hackles shining black; tail inclining towards the head, but plumed; legs blue or black; flesh white and delicate; chickens easily reared." What could be said more in favour of any race of fowls? If they should prove, on full trial, to be deserving of such commendation, we may well sing—

"Hail Columbia!"

Whence have they come to us? Mr. Nolan obtained his first stock from C. B. Newenham, Esq., of the county of Cork, who imported them from South America; but, as we have shown in the first page of the history of the Spanish fowl, there is reason to infer that they were taken to the New World from Spain. The Spanish of some sort would have been probably the sort taken there; climate and crossings may have produced in them the Columbians imported thence to this country by Mr. Newenham.

The authors of the "Poultry Book" add some observations to those of Mr. Nolan. Having first dismissed the untenable notion entertained by the late Mr. Richardson, that because the Columbian is a noble and stately bird, he was led to consider it a primitive variety, and even as the origin of the breed known as Spanish, they state their belief that the

Columbian has resulted, though possibly at a remote date, from the union of the Malay fowl (introduced into South America from the Philippine and other islands in the possession of the Spaniards) with the Spanish fowl, which had accompanied the conquerors of Mexico, and, of course, throughout the continent. The features of the Columbian variety are such as might be expected from this conjectured alliance. The black glossy plumage of the Malay is found in the other, and the figures of each have reciprocal resemblance. "Any bird producing eggs that exceeded the usual weight of those laid by Spanish fowls, and at the same time proved itself a more constant layer, would be a valuable addition to the poultry-yard; but in the present excellence of the latter breed, we should hardly venture to anticipate the combination of two such qualifications in any other fowl, however bred." If we were to admit that the Spaniards and Portuguese stocked the civilized parts of South America with the Spanish breed properly so designated, we should be disposed to trace to this parentage the Brazilians bred by Mr. Graham, which he describes thus: "The Brazilian is very like the Malay, with the same character of comb, but bearded. The plumage is remarkably glossy, in the hens approaching black, while the cock is marked with black on the back and wings. The legs are unfeathered, dark blue, with a little yellow on the feet. Weight of the cock, six pounds three ounces; of the hen, five pounds. The hens have a peculiarly round head and bill, similar to that of the black grouse. The eggs are round, and of a dark mahogany-colour."

There is one chief point in the Spanish fowls of such reputed importance in deciding the qualifications of first-class prize birds, that no perfection of symmetry or plumage, or any other excellence, can compensate for the want of it;—we mean, "a white face, which should extend from the

ear-lobe to the beak, and from the crown to the wattle." And it is the great difficulty of obtaining specimens satisfactorily exhibiting this peculiarity, that enhances the value of those which do possess it in an eminent degree. This white face is shown in the cock before he is half a year old, and completely so at the age of twelve months; but not in the hen until a much later period. The white face is so highly estimated, that ten guineas has been no uncommon price for a bird of either sex possessing it in full measure; and it has been insinuated, that pearl-ash is used in a lotion for the purpose of heightening its effect; but Mr. Baily protests against the use of any wash more potent than cold spring water, applied to the Spanish belle's face, or to that of her aristocratic spouse.

There is, no doubt, a deceptiveness in such artificial making-up for an Exhibition; and the natural *rouge* of the comb, whether this falls over gracefully in the female, or, as it should be, is upright in the male, forms sufficient contrast, even if the white should not be of the purest hue.

Yet in itself, and in a utilitarian point of view, this whiteness is utterly immaterial. The undoubtedly discriminating judge, to whom we have just referred, is rather of opinion that the white-faced Spanish are not such good layers as those which are not of such fair complexion. Now, as the chief merit of the Spanish consists in their fertility, any distinction which indicates their inferiority in this respect, is undesirable. Utility is, in such case, sacrificed to appearance. We are, however, only supposing, with Mr. Baily, that such *may* be the case, not that the fact is certain.

Some notion may be obtained of the extreme difficulty of rearing prize fowls, in which a combination of what are supposed to be the most perfect attributes, from a remark made to the gentleman first named, by a great poultry-breeder:—"I have given up racehorses to keep fowls, and I

find there is no such thing as breeding all winners, and that it is almost as easy to breed the winner of the Derby, as the prize Spanish cock at Birmingham."

The very slightest deviations from the assumed perfections of symmetry, or plumage, or any esteemed characteristics, disqualify poultry competitors,—which might have been prize birds of the first order two or three years ago,—in consequence of the astonishing care which has been taken within this period to improve every class of them, through the stimulating influences of national poultry-shows.

Perfection is now expected, and specimens deficient even in the least important particulars have no chance of success. The appearance of a feather, which may vanish in the next moulting, in the Black Spanish plumage,—though no proof of degeneracy in any respect,—would at once disqualify a fowl of this sort from getting a prize, however fine and handsome it might be: and that such stringent regulations, and what may fairly be considered extreme fastidiousness, are called for, will appear when the vast and increasing multitude of competitors, now exhibited at the great shows, is taken into consideration. For instance, at the Birmingham Show, December, 1853, if all the pens of poultry intended for exhibition had been entered in time, there would have been three thousand of them; and if the exhibitors had not been limited to a certain number of pens each, the space that would have been necessary to accommodate all the volucrine assemblage, would have been prodigious.

At that show,—and Birmingham has had "the merit of having been the pioneer of the many shows now in progress, of having originated a new and lucrative calling, and of having afforded to professional men and tradesmen a delightful recreation, and at the same time that novelty a self-supporting,—and more than that, a remunerating hobby,—the Spanish fowl stood foremost. Captain Hornby, whose

indomitable perseverance is always crowned with success on these occasions of useful and innocent rivalry, gained two first, and one second prize in the Spanish classes, which had the precedence of all others.

It is not a little curious, either as an exemplification of the capriciousness of fashion, or of too exacting a fastidiousness respecting those previously over-praised birds, that in the First Class of Shanghaes, the judges withheld the first prize. This, however, may have been occasioned by the lateness of moulting, and, of course, unfavourable appearance of the full-grown birds exhibited, rather than by any real falling off in their quality.* Yet the Spanish, which moult later, must have appeared under disadvantage, too, at so ungenial a season, though they bore away the principal honours.

The selection of breeding stock must be partly determined by the considerations, whether fancy or taste is alone to be gratified, or whether economy and moderate profit are also to be kept in view, or whether profit or economy is to be solely consulted.

In the two first cases, there should be much attention to shape, figure, size, carriage, feather, and the full development of the distinctive qualities of the Spanish. The lanky, flat-sided birds that we see under the name of Spanish, which they disgrace, are almost always produced by careless breeding.

In this case, the old proverb "handsome is, that handsome does," is uppermost; and the mere outward appearance of fowls, however desirable to persons who have taste for symmetry and beautiful plumage, will have little influence in deciding choice, at the expense of the pocket.

The superiority of the Spanish generally, as egg-producers, is so decided, that any cross from them meriting the character of everlasting layers, is worth encouragement. It is to be

* Report of the Show in the *Agricultural Gazette*.

recollected that the Hamburgh or Dutch is not the only sort from which everlasting layers have sprung. Any hens which with warmth and good feeding will lay eggs, whether large or small, if continuously, through the winter more especially, are to be welcomed. And though the debilitating effects of continued laying must tell upon the constitution, yet where stock is not desired for the mere gratification of the eye, but kept on economical principles, it cannot be inexpedient to stimulate the prolific powers of hens to the utmost. If good layers, which have not the presumption to compete for the prizes of birth or beauty, can, by clever management, be induced to lay within two years the entire complement of eggs which in the ordinary course of nature would not be yielded by them in less than three years, there is an actual saving gained of at least one-third of food, if these effete layers be then fattened and killed—and no one will deny that the flesh of a two-year-old hen is more tender than that of one which has lived three years or more.

No breed would be better, in the supposed case of economy strictly applied, than the common Blacks of Spanish blood, or some of their sub-varieties. If hempseed and greaves, occasionally administered to promote the fertility of the ovaries, have the effect of wearing the constitution, and shortening life in a corresponding degree, who cares, in the instance of mongrels, without pre-eminent grace or beauty, that are brought into the world for the purpose of supplying eggs and flesh-meat? The sooner they fulfil their destiny the better.

This breed has the reputation of being more liable than others to lay soft, or shell-less eggs. Two or three causes may induce this imperfection in them. Precociousness in laying, brought on by too much exciting food, such as the stimulants we have named, is very likely to cause some disorganization of the ovaries, and a consequent imperfection in the eggs

formed there. Close confinement, or the want of a grass-field, for affording the alterative food which grain-fed fowls so absolutely require to preserve them in health; or the absence of calcareous matter, as lime-rubbish, powdered oyster-shells, or any chalk substances, may occasion in the eggs of the Spanish, more than other fowls, a deficiency of shell formation.

We think it would be found, however, that any everlasting layers, affected by the same causes which we have just supposed, would exhibit the same occasional imperfection of egg. This, too, is not unfrequently produced by worrying and frightening creatures so easily excited and alarmed. Agitation and excitement (reasoning from analogous effects on other animals) would very naturally cause a hen to yield her egg prematurely, and therefore imperfect. Inflammatory action in the parts where the eggs are formed and usually perfected, will necessarily occasion some derangement of the proper and healthful functions there, and the soft egg is the evidence of this. The Minorcas, according to Captain Hornby's experience, lay eggs with harder shells than the white-faced.

No one who has not observed the natural craving which poultry closely immured and fed on dry diet testify for green food, such as parsley, cabbage, and beet leaves, can imagine the avidity with which they will devour such substances at times. Confined in towns, fowls often experience an intense longing for such a change from corn; and if the desire be not satisfied, the Spanish, more than fowls generally, from their greater sensibilities, may suffer in the internal agencies which are necessary for the shell-work of the egg.

A correspondent observes, that he has obtained many Spanish hens which had been parted with on account of this supposed incurable malady, and that he invariably overcame it by feeding the rejected hens on oats instead of barley,

which had been the previous diet. But he lets us into the real remedy by adding, that he gave, every alternate morning, a teaspoonful of chalk dissolved in water. This he continued to do for three weeks, giving no oats for breakfast, but feeding the patients instead with a little coarse middlings, wetted into a stiff mash, in which were infused two or three tablespoonsful of old mortar. This treatment soon lowered the tone of the system to a healthy state, and eggs followed firmly shelled.

It would appear, then, that a principal cause, at least of the soft egg, is too high feeding. But the contrary error of stinting laying fowls in their allowance of corn, is much more to be deprecated.

The clever and apparently practical correspondent of the "Agricultural Gazette," who writes under the *nom de plume* of "Falcon," had a hen which was so debilitated from overlaying, that she lost the use of one of her legs in consequence, and was given over by the faculty of the poultry-fancy department. The owner forced down her throat a few peppercorns and bread soaked in ale, which relieved her so much, that in a few hours she was walking about. In two days, however, she had a relapse, when the same dose was administered, and she recovered perfectly, and produced her usual number of eggs weekly. As the Spanish fowls are really worth whatever trouble any ailment, or imperfection in laying may occasion, we have here anticipated the more regular details of management contemplated for a subsequent part of this work, by briefly treating here of the malady just mentioned.

Though the crossing of different kinds with Shanghaes has often led to the production of a very profitable stock for temporary purposes, we do not remember having ever seen a cross between the Spanish and the Shanghaes, that was an improvement on the former; neither have we seen fowls

from a cross of the Spanish with other kinds, equal to the true Spanish itself. Of all the varieties that may be met with,—there are none that could be pronounced equal to the pure Spanish.

For experiment, a two-year-old Dorking hen was mated with a Spanish year-old cock; but the result proved unsatisfactory, with the exception of one pullet, which, in appearance, "took after" the father; it was impossible, indeed, to point out in her any trace whatever of the Dorking fowl; the entire figure, face, and feather, were Spanish, and the comb was clean and clear when she was two years old. She was subsequently mated with a Spanish stag,* and the result was, that all the chicks except one, had the fifth claw and other indications of the Dorking breed.

The hen with which these experiments had been made, was a very prolific layer. She was kept on this account for one year, and she gave full proof that so far as egg-producing went, she was superior to the best of the Spanish; but this was a solitary instance of such excellence.

Why then is it, that we see such numerous crosses of the Spanish, the offspring of which has always been so inferior? The reason is plain enough: the Spanish has always been mated with varieties very inferior to itself, or, if crossed with the Dorking, their progeny have been again crossed indiscriminately. The crossing of the Spanish fowl with other varieties, is usually practised by persons whose custom, when their male birds are getting too old, is to select the largest and strongest of the young ones, regardless of breed or strain. Such neglectful and careless breeding invariably leads to utter degeneration, and the Spanish, as a cross, becomes in consequence greatly despised; for if they be mated with inferior birds, of course the consequences will be

* One-year-old cock. The term is properly applied to the Game cock.

unsatisfactory. If, on the contrary, they be well matched, why should not both breeds be necessarily improved?

The fact is, we have few practical and judicious men who will trouble themselves with *spoiling* breeds,—which they consider it to be, and which, as fancy stock, it really is,—by crossing the Spanish with the Dorking fowl. Yet if a judicious course of management were adopted, and the offspring of this cross carefully selected, and again crossed with different strains of either breed, we are confident that the result would be highly advantageous so far as egg-producing is concerned, and the flesh would also be greatly improved.

For instance, pursue the experiment stated in the preceding page, though it did not prove entirely successful; select the cockerels and breed with Spanish hens two years old, and the pullets to match with a good three-year-old Dorking cock; from the brood select some cockerels to breed with Dorking hens, and again from such issue select the best pullets, to breed with Spanish cocks; and so on, with the occasional introduction of a prime Spanish cock and first-rate Dorking hen.

When experiments of this kind are to be made, they should be tried upon a small scale, by which they may be tested as satisfactorily as on an extended one; if experiments fail in the former case, the consequence is trivial, but if on a large scale, the poultry-yard may be filled with indifferent stock. There are problems sometimes affecting the propagation of poultry, as of more important animals, which it may be very desirable to solve, and it would be folly to lose opportunities of information, from want of sufficient trials; but these may be made with a very few individuals of the poultry-yard; and it should be remembered, that, however successful the effects of crossing may appear to be, hybrids, or the offspring of crossing in any way, are inadmissible as prize birds in the "Fancy" department.

All fowls are better for being hatched in a warm season,

and the Spanish are no exception to this. Though of a sound constitution, no fowl is more injured by cold. Their roosting-places therefore should face the south, and be well protected from cold winds, especially as they are subject to long and protracted moultings. The cold affects their comb also, which is sometimes frost-bitten, with a liability to mortification.

Yet the Black Spanish of all others are desirable for the winter, because, for the prudent housewife's reason, that the black hides the dirt; though they may be dirty and draggle-tailed in winter, their plumage shows less of mud and filth than white, or any bright-coloured plumage. The dark colour is also proof against smoke, so that for a city or town life, especially in manufacturing places, no robe is more appropriate than theirs. No other species of fowls will retain its beauty of plumage under the usually detrimental influences of smoke so well. Even the naturally white face does not show a dark and dingy hue, from the influences of smoke, because the strong contrast of generally black feathers, makes even a dusky white look like "unsunned snow."

The flesh of the Spanish Black fowl is juicy and of good flavour, but not equal to that of the "Dorking" in point of delicacy; the colour, however, is good. The flesh of the White Spanish is not considered so fine in flavour, as that of the Black, yet it is not bad, especially if young.

As regards productiveness, the Spanish are unquestionably of the first degree, and surpassed by none excepting the "Shanghae," which exceeds them, however (as shown in Part I., Table I.), more in the number than in the weight of eggs produced. We would also observe, that the four birds of this family alluded to there, during the two years produced 113 oz. of egg beyond the amount yielded by the Spanish, which, if estimated in Shanghae eggs of $2\frac{1}{5}$ oz. each, amounts to fifty-one eggs, and being sold at market, as was

all the produce of those birds, at the rate of 5*s.* 6*d.* per hundred, the value of the fifty-one eggs is brought to 2*s.* 9½*d.* Now the extra expense of producing this 2*s.* 9½*d.* by keeping the Shanghae fowls during the two years, was found to be 10*s.* 10*d.* For the convenience of our readers we furnish them with the following Table:—

	Aggregate weight of eggs laid during two years.	No. of eggs when brought into Shanghae eggs of 2½ oz. weight each.	Comparative intrinsic value of egg-stuff at 5s. 0d. per 100.	Cost for keep during the two years' trial.	Total net profit upon each class.
	oz.		£. s. d.	£. s. d.	£. s. d.
4 Cochin or Shanghae	3569	1623	4 9 3	3 5 0	1 4 3
4 Spanish	3456	1571	4 6 4¾	2 14 2	1 12 2¾
4 Dorking.....	3004	1365	3 15 0¾	2 14 2	1 0 10¾
4 Polish.....	2961	1346	3 14 0¼	2 11 11	1 2 1¼

From this it may be seen that the Spanish produce in two years, as far as comparative intrinsic value is concerned, is but 2*s.* 10¼*d.* behind the Shanghaes, whilst the latter, during the same time, cost 10*s.* 10*d.* more to keep than the Spanish. The difference therefore is 7*s.* 11¾*d.* in favour of the Spanish. We here discover what really is the intrinsic value of the Spanish eggs calculated by weight. A hundred Spanish eggs average fifty ounces more than common fowls' eggs. Therefore families which consume their home-produced eggs, and so receive the full advantage derivable from the greater weight of the Spanish ones, will derive more profit from these than from the Cochins.

But when eggs are sold by the dozen or the hundred, regardless of weight, they make a very different return. Who then in this case obtains the advantage? The purchaser,

undoubtedly. Supposing that they are bought at market, we shall say for 6*s.* the hundred, regardless of weight, and retailed at a certain price each, according to size, their greater size renders them more valuable as being of greater weight than smaller eggs, such as those of the Cochins compared with the Shanghaes. Yet the Spanish will perhaps have produced in this illustrative instance but 6*d.* more per hundred eggs, which is a poor return for the hundred half-ounces that a hundred Spanish eggs usually weigh over and above the same number of the Shanghaes, or any other fowls' eggs.

Now to calculate in a common-sense and equitable way—can it be doubted that three large Spanish eggs, each weighing $2\frac{3}{4}$ oz., will go farther than three Shanghae eggs, each one weighing $2\frac{1}{5}$ oz., a difference amounting to nearly 2 oz. in every three eggs? The eggs of the Spanish fowls then are of much more intrinsic value than those of the Shanghae. In round numbers, the hundred half-ounces being brought into Shanghae eggs of $2\frac{1}{5}$ oz. produce twenty-three eggs, which are worth much more than the 6*d.* they bring at market when sold by weight.

We therefore affirm, that those who keep fowls, take their eggs to market, and sell them at a certain price per hundred (little difference being made between those which are light of weight and others that are heavier), are not the persons who derive benefit from fowls laying larger eggs. Thus it is while business is carried on at market upon the present system of selling at a certain price per hundred; we hope, however, that this bad mode of dealing will be abolished, and a more equitable system of vending adjusted. The eggs of the Spanish fowl are not merely very large, but particularly delicious in flavour. The hens are free layers, generally producing two eggs consecutively, and then missing a day.

The general form and position of the Spanish fowl is very

upright, slanting from the neck; the bearing being the reverse of the Cochin fowl, as the back of the latter bird inclines upwards, while the front parts have a contrary tendency, thereby forming extraordinarily large proportions behind, whilst the back of the Spanish fowl passes sharply downwards. These are well-proportioned birds, and their general bearing is replete with grace, harmonizing with a beautifully symmetrical form.

Although we have recommended them as good fowls for town, it is not to be inferred that they are not equally serviceable in the country, where, if in the enjoyment of a grass-walk, they amply reward their owners by their graceful appearance, as well as by a bountiful production of eggs.

As to healthiness, they (as is the case with the generality of black fowls) are less liable to roup than lighter-coloured birds; in fact, the Spanish fowl is less subject to disease than are most of the common black varieties.

It can hardly be said that they are pugnaciously inclined, and they will rarely fight or quarrel in a decided style; but they are very averse to strange fowls, and if separated from each other even for two or three days, the hens will disagree seriously upon being reunited; they often dispute for pre-eminence, and in case one hen should gain and hold her ascendancy, she will follow up the privilege of authority by harassing strangers, until perfectly well assured of having firmly established her authority over them also. Subsequently, she will again form intimacy with all her associates indiscriminately; which proves that she may be passionate and excitable, but not revengeful.

In case of a strange hen being tormented by her companions for any length of time, so that she is afraid to come and feed with them, or of the cock displaying his protracted dislike to her, it will be right to remove her, or she may be reduced to so low a condition as to render her unable to escape their

persecutions, and avoid death from their violence. This, or any confusion and quarrelling in the poultry-yard, may sometimes occur, and not least frequently with the Spanish race, and cause serious loss and inconvenience; especially if some highly-prized hen be sent for conjugal purposes to a stately Hidalgo, who takes a dislike to her at first sight, and beats instead of wooing her.

It would be best in the case of a hen destined for bridal purposes with a strange bird, to bring them together a month before the breeding season, in order to establish the desired intimacy; or, supposing the breeding season to be at hand, the hen and the cock may be at once placed under wicker baskets for two or three days, before they are let loose together in the same yard, seeing each other, until they begin to ogle and serenade, and make love after the Spanish fashion, but remaining apart, until by degrees their acquaintance may be drawn closer,—cage to cage—bar to bar —until by the superior force of mutual attraction, their previous repulsions are so counteracted, that on liberation from this gentle captivity they become sociable and loving; and the cock thenceforth insists on due respect being paid to his new mate by all the other concubines, who soon become reconciled to her, and free from jealousy.

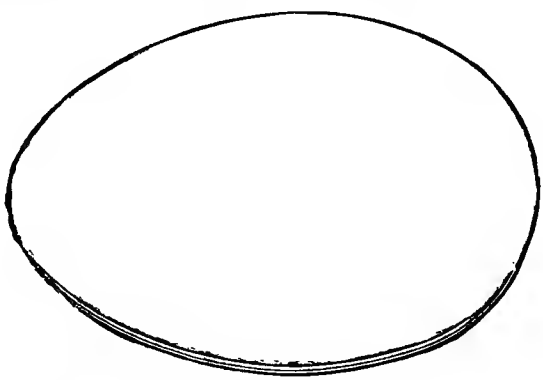
To provide hens of the best kind for furnishing the table with eggs, a cross of any prime sort of fowl with the Spanish would be beneficial, if judiciously done; but as regards the Cochin, a cross with the Dorking would be better than with the Spanish.

The Spanish is always inclined to run long both in the thigh and shank; the Cochin has also this tendency. The form then would be improved in this particular, by pairing a round, plump, short-legged Dorking hen with a Cochin cock; good birds would be the result. But as regards a cross between the Cochin and the Spanish, we should not be sanguine of success, from the cause intimated. The alliances of

long-legged varieties would naturally tend to a still greater length of limbs.

The Spanish pullets commence laying when six or seven months old, and occasionally sooner, though some of them commence at a later period, according to feeding and treatment. But premature fertility is not to be wished for, as it will frequently happen that pullets which commence laying very early, seldom lay when fully grown so large an egg as those produce which do not lay before they are eight months old. Indeed the debilitating effects of either premature, or continual laying in ripe age, as respects the Spanish breed (which has been classed with "everlasting layers," from its reputed fecundity), are now and then manifested by the loss of the body-feathers in moulting, besides the usual falling off of the neck, wing, and tail feathers; and when thus stripped, the poor birds look very miserable in harsh weather. The reparative agencies in the body, which, if they were not exhausted by egg-producing, would quickly supply a new growth of feathers to succeed those which had fallen off in the regular course of nature, and not in the excess just stated, are insufficient to supply the deficiency.

The colour of the Spanish egg is a clear white; its surface is very smooth:—



FAC-SIMILE OF THE "SPANISH" EGG.

Nine of these eggs are sufficient for hens of ordinary size, as they are so much larger than the generality of fowls' eggs. If a greater number be set, they will not be sufficiently covered, except by a turkey or a goose. It will, indeed, be unwise, with any breed, to select the first dozen of a pullet's eggs for hatching; not that they are unprolific (assuming of course that the pullet had not been without a male partner), but, being comparatively immature and small, it is not likely that large and strong chicks will be the issue. Besides, pullets occasionally do not enter into tender union with their male companion until they have laid five or six eggs.

The colour of the Spanish chicks, when first hatched, is a shining black, with a pinafore of white sometimes on the breast, and a little white also around the bill and the eyes, that gives a milky appearance to the head and face, which subsequently becomes a dead white. They do not, until nearly grown, get their full feathers, and therefore they should be hatched at a favourable season of the year, to be well feathered before the autumnal fall of temperature. But "there is anything but an uniformity in the time Spanish chickens get their plumage; the pullets are always earlier and better feathered than the cockerels; the latter are generally half-naked for a considerable length of time after hatching. But this is not universally the case, for some of my best cockerels were feathered tolerably well at an early age. This is a fact worth some particular remarks, as many superficial observers in this neighbourhood have invariably rejected, for breeding purposes, the cockerels which got their feathers early, supposing from that fact that they were not pure bred. But I have not only found them to possess all the qualities of the Spanish fully and truly developed, but that their early feathers so screen them from the inclemencies of the weather, that they are enabled soon to outstrip their brethren in size."*

* Mr. Bissell.

The original Spanish fowls, brought from the West Indies and naturalized in Spain and Holland, were excellent sitters and good mothers; but the high artificial culture to which they have been subjected in this country, coupled with the occasions of breeding in and in, have had a great share in influencing the Spanish hen to depart from her primitive motherly habits.

Spanish hens seldom exhibit a disposition to undertake the task of incubation, and if it be attempted, they will in the generality of cases forsake the nest long before the chicks would be hatched. Sometimes, however, they will perseveringly perform the maternal duties; but it is against their general character. They are somewhat disproportionately long in the leg, consequently are more subject to cramp; this partly accounts for their being so averse to such sedentary occupation.

Since, therefore, they will not undertake the office of incubation, we must impose it upon some other class of fowl, that will not only accept the task, but will joyfully hatch and rear the young of even another species until they are able to take care of themselves. It is by this means the Spanish breed is still preserved and multiplied.

Mr. Nolan is so enamoured with these noble Spaniards, that he considers it a grievous offence against economy to have the time of a Spanish hen taken up with hatching and rearing chickens, when she might be adding to the stock of her own kind by laying eggs, which could be hatched by deputies of less-distinguished birth.

Yet that the Spanish, notwithstanding their prolific qualities, and the great size of their eggs, are not worthy of preference to some other sorts, especially the Dorkings, seems to have been the decided judgment of the Royal

Agricultural Society, who gave their highest prize to the latter class of fowls, in 1852.

This preference from so distinguished a society, whose authority appears indisputable, has given rise, however, to discussion, and no little dissatisfaction to the admirers of the Spanish class. Trivial as the subject in itself is, it has a legitimate claim to a passing notice in these pages, which fly at no higher quarry than cocks and hens.

The case may be stated in a few words:—The Agricultural Society, considering that it would be more consistent with their views to give any impulse in their power to the multiplication of the breed of fowls most profitable to the farmer, and most generally beneficial both to the breeder and the consumer, named the Dorkings, on such utilitarian grounds. They did not view the fine Spanish birds with the mere eye of the "fancier," but looked to the real marketable value of the fowl, the economy of its keep, its hardihood, and other good properties. In short, true to their principles, they looked to the substantial merits of the poultry which they honoured with their patronage; and rightly (but without Shylock's malevolence) exacted "the pound of flesh," in this instance, instead of a weight of showy feathers, and the heraldic crest of the *grandees*, which, to the indignation of their devoted party, were obliged to follow in the train of the humbler Dorkings—a mere country breed, not altogether "unknown to fame," but having no pretensions, according to the notions of the Fancy, to appear, at all, amidst the very select society of aristocratic fowls, and far less at the head of them.

Some said that this extraordinary honour paid to the Dorkings, was intended merely as a compliment to the people of Surrey, in whose county the Agricultural Show was held on the occasion referred to. Others saw the matter in what

we decidedly deem the true point of view—that of general utility.

That the highest prize should have been given to Dorkings, caused some astonishment in the minds of the Spanish poultry-fanciers in particular. One of these gentlemen, though admitting that the object of such meetings (as those of the Agricultural and Auxiliary Societies) is to encourage the best breeds for the farmer and cottager, denied that, even on such grounds, the Dorkings were superior to the Spanish, except in being better for the table—a very essential matter. He asserted that the Spanish will lay in the year three eggs to two of the other kind, and, what no one can deny, that the weight of the Spanish egg is greater.

This gentleman, who strongly advocated the cause of his favourite Spanish breed, unwittingly used an argument which was fairly turned against him. He had reasoned, that because it was easier to get many good Dorking chickens than one good white-faced Spanish fowl,—an obvious argument in favour of the Dorkings,* the Spanish should be more encouraged.

We must, however, hold the scales of justice evenly, and deny the general accuracy of a statement, however correct it may have been in the individual case put forth by the antagonistic patron of the Dorkings, that these lay as many eggs as the Spanish, the heaviest weight of a single egg produced by either being three ounces and a quarter. Spanish pullets might have been compared in this instance with Dorking hens, or the Spanish might have been inferior specimens, and the Dorkings first-rate ones. The tables of comparative weights that we have instituted, give a greater weight to the individual eggs of the Spanish by a quarter of an ounce. Some prime eggs of this breed have brought five

* See *Agricultural Gazette*, June 26th, 1852.

shillings each for setting! Such are among the results of the enthusiasm in poultry-keeping, which so usefully operates.

The conductor of the Birmingham Show, in October of the same year, gave precedence to the Spanish; but taste and fancy may be supposed to have been the guiding spirits there. While the Agricultural Socicty, which associates the breeding of poultry with the higher objects of the farmer's pursuits, from the graver considerations of economy and profit, "submit prize lists (in the words of one of their Poultry Committees), which they consider calculated to stimulate farmers to improve the stock of their poultry-yards; and not having reference to feather and properties, but being intended to encourage the breeding of those varieties which are most valuable for the table, or the supply of eggs."

In a theoretical classification of fowls, Mr. Dixon has placed the Spanish in a position, which it must gratify the "Spanish fancier" to contemplate; namely, at the top of an entire class of full-sized fowls,—not, however, from any peculiar excellence, we must say, but from the form of the comb, which he lays down, with Aristotle in his mind's eye, to be most properly a distinguishing feature; and assuming that the serrated upright fleshy comb is the typical distinction of the cock, he gives to the Spanish fowls the pre-eminence which the great development of comb in this breed entitles them to in this respect. Taking this race as the type, he suggests a classification which should embrace the different species, and some varieties, beginning with the single high-combed Spanish, through the smaller or rose-combed breeds, to the commencement of the tuft in the lark-crested fowls; placing the top-knotted Polanders at the bottom of the class of full-sized fowls.

In instituting a comparison between the Shanghaes and Spanish breeds, more particularly, we avail ourselves of the opinions of Mr. Edward Bond, a Yorkshire gentleman, who has given the subject much attention.

On the whole, he prefers the Cochin China to the Spanish, as the latter, though *less tender in rearing than the Dorkings* (this would have been a point eagerly caught up by the advocate of the Spanish, to whom recent allusion has been made), are afterwards not less hardy. They have succeeded well with Mr. Bond, in the neighbourhood of Leeds. Besides their acknowledged beauty, he especially notices their uniformity as a flock, so conducing to their agreeable appearance. As to their utility—the grand consideration after all—their eggs are as good, if not better, than those of any other fowls, and though not so frequently laid in winter as in the case of the Cochins, the size of those they do lay is a set-off on the other hand, besides the consideration that they do not lose time in their desire of incubation. Believing that they will lay a greater weight of eggs in the year than any other fowls, he considers them on this account the best suited to the wants of the farmer and cottager, who have facilities for the sale of eggs. He does not admit any inferiority in their flesh for the table; on the contrary, he says that by some they are considered as very superior for this purpose. They are not so domestic as the Shanghaes, but will not ramble much from home, if well fed; nor are they inconveniently quarrelsome among themselves, though he has twenty-one hens and three cocks of the breed. This is the most decided panegyric on the Spanish fowls that we have seen; and coming from so respectable an authority, it will have its influence with many; yet not with ourselves. In respect of general utility and profit, we think it has been rated beyond its intrinsic worth.

The novice who for the first time purchases a "setting" of Spanish eggs, and after hatching them finds fault both with himself and the dealer—if not in audible expressions, at least in internal misgivings upon seeing the chicks marked black and white—need not be discouraged on that account, for he will eventually find that those parts which were at first white, will ultimately become black.

At ten weeks old the chicks are well fledged and strong, but until that period they require warmth and great attention. Afterwards they are almost as hardy as the "Cochin China" chickens.

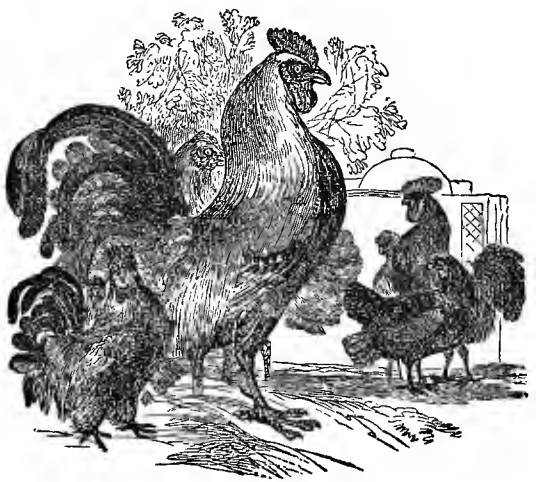
In the cockerel, little of the real white face is seen until the age of four months, when both in cockerels and pullets it gradually makes its appearance. Before that time they have a very delicate look about the face, and long skinny, mealy heads. A "blushing" countenance, or a shade approaching to it, is a very bad sign in this family of fowls.

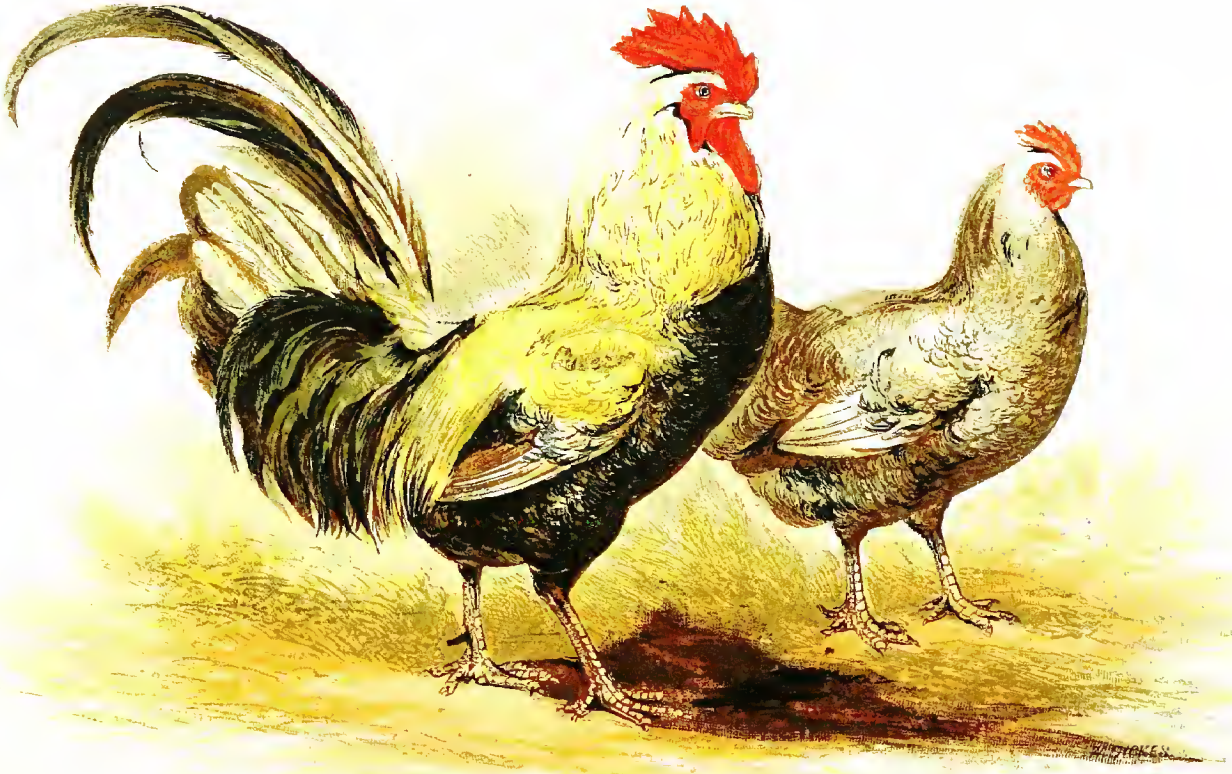
Some specimens begin to show the white face much earlier than it is seen in others, and on the other hand, chicks of which we have entertained but little hopes, from their backwardness in developing "face," have ultimately become very *cheeky* birds. At five months they will generally be well plumed, but the face, comb, and gills continue to grow after this time. The tail of a cockerel is not by any means so full and circular, neither is the general plumage so developed and beautiful, as when he has arrived at two years' growth, at which period, immediately upon moulting, he is considered in his prime.

At the age of six months the cock should weigh about five pounds, and pullets four pounds. As regards feeding, change of diet is very essential.

Feeding will occupy our attention in a distinct series, in which every particular connected with that subject will be fully discussed.

Great disappointment usually accompanies a novice's first attempt at breeding prize stock. In the case of the Spanish fowl, there is much less probability of success attending the young experimenter's first season, even if two first-rate specimens have been procured for breeding stock. These may be perfect in their kind, but it will seldom occur that more than two or three chicks out of a full brood will be obtained possessing the full parental excellence in externals: this is the case even with the most critical matching, and the most experienced breeders. The novice's first experiment generally proves a decided failure, unless the breeder of whom he makes his purchase well matches the birds. Great judgment is requisite in this particular, and extensive practice with close observation, present the only means of acquiring that judgment.





DORKING FOWL.

The Dorking Fowl.

Our ethnological researches as to the remote origin of the Dorkings, have failed in fixing the precise period of their appearance in England. Cæsar mentions that the Britons of his day kept fowls, but only for amusement or pleasure, as the flesh of poultry was prohibited as food by the Druidical laws. If, then, a fair plump chicken was forbidden to our Celtic progenitors as an article of food, and yet, in their condition of semi-barbarism, they bred and domesticated poultry, it could only have been for the purposes of the cockpit. The British were not then poultry fanciers, their habits and tastes being too rude for such refined pursuits, which are only consequent on a high degree of social advancement; but they may have indulged in that barbarous passion for cock-fighting, which has always characterized, and even now disgraces so many of the Asiatic nations who have not yet emerged from their original barbarism. Nay, it is not so long since, in our own country, this most objectionable of popular British sports has been suppressed.

However this may be, both the white and coloured Dorkings urge their claims to priority of ancestry in England; some of the enthusiastic admirers of the white Dorkings say, that they are a more ancient race than the coloured, and that the coloured are a variety derived from them; whereas the supporters of the coloured Dorking maintain that the white, which are of lesser size, and therefore of an assumed degeneracy, are a deteriorated offspring from the others. If we may venture to offer a conjecture on this abstract point of physiology, we should say that, as in vegetable propagation, white flowers are often found to break or degenerate into

colours, although coloured flowers do not become pure white,—so, by analogy, the white bird would degenerate into a coloured one, though the converse would be unnatural.

The present race of Dorkings must have acquired more pacific dispositions, however, than the aborigines in Cæsar's days, if they were kept for the purpose of fighting, for they certainly have no apparent affinities with the game fowl, such at least as they are known to us. Yet they are by no means of a timid nature; on necessary occasions, they manifest sufficient spirit: even Dorking hens, like other females, can scold and scratch when out of humour, and are occasionally crotchetty and whimsical; but their natural dispositions are amiable in the main, though sometimes censurable. A short and simple anecdote will exemplify this. The writer of this article possesses two Dorking hens, which have had two broods in the present season. They were both affectionate mothers, until the period when their instinct led them to separate from their progeny, over whose tender days they had attended with that self-denial and self-devotion which none but a mother can so forcibly exhibit. But when the little ones no longer needed the maternal care, and natural instinct led the hens to separate from them, and lay and incubate again, one of the hens drove away her offspring in a very harsh and unfeeling manner, and with a suddenness of impulse which must have astonished, as it certainly terrified, the abandoned and even persecuted chicks, which might be seen cowering apart in some secluded nook, beaten by their recently affectionate mother, if they dared to approach her, or pick up a crumb in her presence; and at night, instead of nestling under the maternal bosom under which they had enjoyed warmth and secure repose, they were forced to group together, apart from the outstretched wings beneath which they had been curtained, while the estranged mother sprang to the roost above their reach.

The other hen, sister to the former, though so different in disposition, as will be seen, severed her maternal connection with her offspring with delicacy and tenderness; she did not cause them to tremble and fear by day, and she gradually separated from them at night. During many successive evenings some of the more frolicsome and inconsiderate little ones fearlessly followed her to the roost, and some of them, bolder and more active than the others, jumped upon her broad back, on which for a time they fixed themselves, while the others got upon the same roost under her wings, and coaxed this good-natured parent to expand them in the accustomed manner for their comfortable rest.

On other occasions, they used (at the same period) to mount her back as she trod the floor, and thus loaded, while bending beneath the unwonted pressure, she resembled an Irish beggar, trudging along with two or three sturdy urchins upon her back, seated on a gigantic *bustle*, containing all her spare wardrobe, which appendage, however, has no very obvious resemblance to the becoming tail of the hen.

Before entering into minute details of the Dorking breed, it will not be inappropriate to allude to some general points relating to the classification and qualities of poultry, and the public interest which the breeding and management of them is so usefully exciting. And it is a successful result of the care and intelligence exerted by us in attending to the right treatment and judicious propagation of poultry—as of other domesticated creatures given for the use of man—that the fowls which are kept and nourished by us will become much more productive of eggs and living offspring, and much larger and fatter for the table, when in a tame and comparatively confined state, than they would be if left to roam at large under all the vicissitudes of climate, the precariousness of sustenance, and the perpetual assaults of more powerful animals. The elephant, it is said, disdains to perpetuate

its gigantic race while in bondage, but happily for us, domesticated cocks and hens are not so dignified, and "born for our use, they live but to obey" the calls of our appetites; and the vast produce of eggs which may be placed on our tables, or hatched into the most delicious meat, seem to be as unlimited as our means of feeding and lodging fowls. If we were to select any class of these for general purposes, the Dorking would probably be our choice.

But a few years have passed since this important branch of rural economy began to receive the attention and stimulus which it deserves. Farmers in by-gone days thought it too insignificant for their attention, and only suited at most to that of lady amateurs; they despised the petty profits which might be derived from such a source, beyond the supply of their own tables, and left the English poultry market open to the industrious French and Belgian peasantry, who have been long supplying it with their lank and ill-shaped fowls, and an immense amount of eggs; whereas a proper sense of nationality ought to stimulate all our agricultural classes to multiply more extensively our own plump, fleshy, and well-flavoured poultry, among which it is pleasant to see the native Dorkings sometimes placed in the first class of fowls, and above all foreign ones, which, more or less, have lately become so fashionable. A list of the prices of useful and ornamental poultry from the establishment of that distinguished judge of fowls, Mr. Baily, of Mount-street, London, is lying before us; and the Dorkings are at the head of his list. Mr. Baily is competent authority on this point, and we are glad to have seen due honour given to our favourites by him at some of our earlier poultry shows,—Dorkings, whether double or single combed, have been favoured with the first places, and the prizes for them have been emulously contested by various grades of society. Every year the number and importance of them increases: at the last Christmas Metropo-

litan Show, £1,636 was taken for poultry exhibited there, and the Dorkings which were reported to have been perfect, and were there in great numbers, sold better than any other class; according to the report of the *Agricultural Gazette*, they made in most instances more than the reserved prices put upon them—several pens of a cock and three hens realizing ten guineas.

The results of such Shows in improving the breed of poultry generally, and of Dorkings particularly, have been, among other proofs, remarkably exemplified in Hertfordshire, where the inferiority of the poultry was obvious. Lord Verulam, one of the chief proprietors of that county, offered a prize for the best Dorking cock and hen. At first there was little competition, but now Hertfordshire can show as good as any other county. Assuming that Dorkings are the most beneficial for little farmers and cottagers to rear, it is desirable to multiply provincial, and even parochial exhibitions, for the purpose of encouraging this class of fowls, and, generally, of promoting the propagation of the best kinds of poultry of all sorts. The fowls of the Irish peasantry, which so frequently furnish the tables of the British consumers, are in many localities of Ireland of inferior kind; and if perfection of form, with all the most valuable qualities for the cottager's practical object, are thought to be realized in the Dorkings, confusion of kind by careless breeding with other sorts, and the consequent hybridising which must ensue, should be carefully avoided; for though excellent offspring may be obtained in poultry amidst many decided failures, by good crossings, such offspring will frequently be bad, as in vegetable physiology; and mongrels employed to multiply their common kind, would usually generate a very defective family, and the succeeding generations would become more and more deteriorated. In the present case, pure Dorkings should be continually bred from the same race, but not from

blood relations, especially from such near ones as brothers and sisters: pairs may be mated from separate districts, and thus, though of the same class of birds, degeneracy from breeding in and in, continually, may be easily avoided.

Sir John Sebright, to whom our country is so much indebted for his scientific and practical experiments in the breeding of poultry, found that too long a continuance of breeding in and in, produced in his poultry too great an elongation of the legs,—a defect which never affects a good Dorking. But the change of blood as to consanguinity—yet without intermixture with another tribe, would prevent this or any other modification of deformity.

The Editor of the *Agricultural Gazette* has coincided with Mr. Baily in predilection for the Dorkings, and professes his own readiness to second any effort to restore the Dorkings to their rightful position, and gives praise to Mr. Baily for having had the courage, during the present (Cochin) cock and hen fever, to patronise the Dorkings; and adds, that "he should be encouraged in his endeavour to bring us back to Dorkings and common sense."

The Dorking is distinguished by ornithologists, as the *Gallus Pentadactylus*—or, in our plain English, as the five-toed species; and Pliny alludes to them as a variety existing in his time, and distinguished by an odd number of toes.

It is most probable that this sort was introduced into Britain by the Romans. Columella has accurately described the modern-coloured Dorkings: "Let them be of reddish or dark plumage, with black wings. * * * Let the breeding hens be of robust body, square built, full breasted, large heads, with upright and bright red combs. * * * Those are believed to be the best bred with *five toes*." All these points are typical of our Dorking, except the "large heads," which some crossings may have occasioned. Yet the old Sussex or Kent fowls, which are very similar to the others,

but without the fifth toe, were, it has been conjectured, the originals of the Dorking. The converse is equally presumable when the probability of an immigration from Rome of the *Pentadactyli*, so familiar to the Roman naturalists, is admitted. But a Norman origin is also suggested. Even this antiquity of eight centuries is sufficient to justify the honest pride of the Surrey people; and certainly if Normandy has been the cradle of the Dorking, the descendants of the parent stock do not reflect discredit on their high ancestry, but exceed the modern Norman fowls in the most essential points. But after all—and this we state in the most private and confidential manner, and in the hope that it will not reach the ears or eyes of the Dorking ladies,—Mr. Baily has intimated in his preface to the "Dorking Fowl" (but fortunately for him prefaces are seldom read), that they have not been longer established in Surrey than "about a century."

We have Mr. Baily's professional and disinterested judgment, which has pronounced "that there is no breed to be compared with the Dorking, which unites in itself more than any other all the properties requisite for supplying the table; that the hens are good sitters and good mothers, and that there is a natural tendency in the breed to fatten, so that the young ones are made to attain to eight or nine pounds' weight, and at table they surpass all others in symmetry of shape, and whiteness, and delicacy of flesh:" and also the following tribute of homage to the excellencies of our favourites from the elegant and classical pen of the Rev. E. S. Dixon: "For those who wish to stock their poultry-yard with fowls of the most desirable shape and size, clothed in rich and variegated plumage, and not expecting perfection, are willing to overlook one or two other points, the speckled Dorkings are the breed to be at once selected. The hens, in addition to their gay colours, have a large vertically flat comb, which, when they are in high health, adds very much to their brilliant appear-

ance, particularly if seen in bright sunshine. The cocks are magnificent; the most gorgeous hues are frequently lavished upon them, which their great size and peculiarly square-built form display to the greatest advantage. The breeder, and the farmer's wife, behold with delight their broad breast, the small proportion of offal, and the large quantity of profitable flesh. The cockerels may be brought to considerable weights, and the flavour and appearance of the meat are inferior to none. The eggs are produced in reasonable abundance, and though not equal in size to those of Spanish hens, may fairly be called large. They are not everlasting layers, but at due and convenient intervals manifest the desire of sitting. In this respect they are steady, and good mothers when the little ones appear." Having short, compact legs, they are well formed for incubation; and while long-legged Cochin Chinas are indisposed to scratch the ground for food—probably because their legs are too long for activity,—the Dorkings use theirs nimbly. Yet birds formed as the others, may be the best to encounter the moisture of rank herbage in shrubberies, plantations, or wet fields,because their legs there act as stilts on which their bodies are borne above the damp vegetation, which is prejudicial to the gallinaceous tribe.

Young birds of this form remind one of the Continental peasantry near submerged swamps, who, in winter, are obliged to move about on high stilts.

The Dorkings are not so well suited for damp soils, by reason of the shortness of their stilts. They are also distinguished for breadth of body, the somewhat partridge form, and also, in the poulterer's phrase, for being clean headed; Though they possess great similarity of form, there is much variety of colour; but they are generally distinguished as white, and grey or speckled, and also by the character of the comb—viz., as single and double, or rose-combed; and classed accordingly at the poultry shows.

Though the Dorkings are divided into these two principal classes—the *white* and the *coloured*,—there are recognised sub-varieties, with distinctive marks.

THE WHITE DORKING.

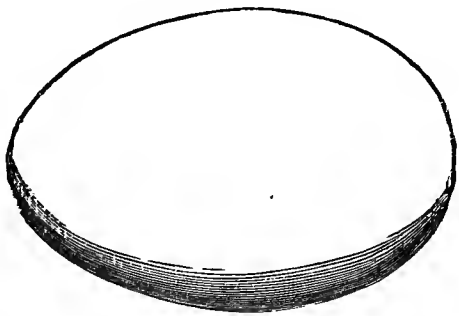
This sort is preferred by some breeders, and especially in the neighbourhood of Dorking, where they are usually worth from seven shillings to half a guinea a couple, alive, which, according to our informants, is a little more than the coloured fetch; as mere ordinary stock, this is, however, much less than 'is charged by professional breeders in London, who furnish the best and finest types of the kinds. Prize birds, indeed, of the Dorkings, frequently bring from 2*l.* to 3*l.*

A reason assigned for the higher price, reported to us as obtained in Dorking for the white, is that they are more scarce than the others; and this scarcity may arise from the greater uncertainty of rearing them, which, if they are not wanted for merely amateur purposes, would be decidedly condemnatory of them where they are only kept for practical and economic purposes.

This variety seldom produces more than two broods in a year, because they require more favourable seasons, and greater warmth than their hardier congeners.

The white is not so large as the coloured (this is obviously a disadvantage), and, as a general rule, whiteness in animal physiology is indicative of constitutional delicacy: this discouraging opinion of white fowls was maintained long ago by Columella, who condemned them as tender in constitution, and deficient in vigour and fecundity. Their average weight is less than that of the coloured, "and although," as Mr. Baily has remarked, "it may appear anomalous, it is not less true that white-feathered poultry has a tendency to yellowness in flesh and fat." M. Soyer, no bad judge of the matter, says, that fowls with black legs

are the best for roasting, and those with white best for boiling; consequently it would appear, that Dorkings are better suited for the pot than for the spit. The reader may satisfy himself on this point experimentally. The white do not lay so freely as the coloured; and from their rather inferior size, their eggs are of course smaller than those of the coloured. The difference, however, is but trifling. The diagram represents the average size and form.



A Dorking lady, who has had during three years a large stock of pure white, found that the eggs diminished in number—a circumstance which for some time appeared inexplicable. It was suggested to her, that crossing the white with the coloured might remedy the failure; she acted on this advice, and the result was that the eggs became as plentiful as at first. No doubt this was judicious for the mere purpose of increasing the size and quantity of the eggs by an infusion of new blood; and this mode of inducing increased fertility in the laying stock by changing the blood, is exactly what Mr. Dixon has suggested with respect to the Dorkings, his opinion being that they are not profitable, if kept thorough-bred and unmixed. But on the physiological principle already noticed, all crossing where the excellence

of stock is an object, should be discouraged. The crosses produced even from the most perfect parents of different families will, like hybrids generally, degenerate, and revert to their remote or original types, losing the characteristic merits of the new families, from which they have had their more immediate parentage. The mode of correcting such a deficiency as that experienced by our Surrey correspondent, is to introduce new breeding birds every second year, at least, from different *strains* of the same tribe—totally unconnected by blood relationship. As Dorkings have not degenerated in any of their good qualities, they do not require crossing, even if it were admissible on general principles.

The distinctive points are as follows:—

The White Dorking Cock and Hen are perfectly white in the plumage, bills, and legs; both should have a double or rose-comb of bright red, though a single one is frequent, but this is considered a sign of degeneracy. The cock is very upright and spirited in his appearance, and his spurs are usually lower than those in other species. The fifth toe should be well defined. The hen has no individualities.

The Grey or Speckled Cock.—The head round, and furnished with double or single comb, of bright red; wattles, large and pendent; the ear lobes almost white; hackles, a cream-white, and the feathers of the hackles dark along the centre; the back, grey of different shades, interspersed with black; saddle feathers, same as hackles in colour; wing feathers, white, mixed with black; the larger wing coverts, black; the lesser, brown and yellow, shaded with white; breast and thighs, black or dark brown; tail feathers, very dark, with a metallic lustre.

The Grey or Coloured Hen.—Face, lighter coloured than that of the cocks; hackles, black and white; back, dark grey; saddle and wing, grey, tipped with black; tail, almost black. Five claws and white legs characterize both sexes.

The *Spangled* have emanated from the coloured sort, but spangled parents do not often produce spangled offspring. It has been noticed by breeders and writers, that in crossing coloured Dorkings, the cockerels derive colour from the hen, and the pullets from that of the male bird, as is indeed, we believe, a natural law in the propagation of birds. The characteristics of the spangled cock are, light purple, tipped with black or brown; the same hues on the back; wings, rich dark brown, interspersed with black and white; primary feathers in wing and tail white; hackle feathers, mineral green. The body plumage of the hen is principally grey, interspersed with white and brown.

But there are subdivisions, according to Mr. Baily:—

"*Japan.*—Straw neck, hackle, and saddle; black breast, thighs, and tail. Hens, any grey to match.

"*Silver.*—Same divisions of colour as in the Japan cock; but the colour is exchanged for one approaching more nearly to white. Hens to match, slate-coloured body and hackle.

"*Pencilled.*—Black and white, and breast tinged with red.

"*Golden.*—Cock's breast, thighs, and tail quite black; hackle, saddle, and neck red. Hens to match, dark brown, spotted with black. In these there should not be one white feather.

"*Red Speckle.*—Cock, breast black and white; thighs black; hackle, saddle, and body red, speckled or intermixed with white, the prevailing colour being red. Hen, colour rich chocolate, spotted or splashed with white."

The *Muff Dorking* is distinguished, as its name intimates, by a ruff or luxuriant breast; this sort is not recognised as a pure variety, the muff being supposed to be some accidental appendage. The legs of the pure Dorking family are quite white, in both sexes. A blue leg would be inadmissible to a prize contest. The fifth or supernumerary toe is the peculiar

mark distinctive of the whole breed under consideration, which variety is termed by Buffon *Coq à cinq doigts;* and, according to his observation, exhibiting individual instances of six toes. Yet this can only be considered a rudimental toe, according Mr. Macgillivray (the most scientific ornithologist of our country), who says that birds have never more than four toes, unless the spur be considered such. Both the male and female birds have this peculiarity. Though the Creator has not designed anything without its appropriate purpose, this additional member must rather be deemed a distinctive than a useful one, just as the absence of a tail, or the colour and size of a comb may distinguish an individual race of fowls. These over-furnished claws have been denounced as sources of danger and annoyance to young chicks when first issuing from the shell, rendering the mother's movements hazardous to them. "They frequently trample to death their chicks during the process of hatching, and in a small coop they demolish them at a fearful rate." The Dorkings, though admirable sitters and nurses, have thus been objected to as mothers, on account of the accidents which the peculiar formation of their claws may produce; and a gentleman has expressed to Mr. Dixon his opinion, that they never should be cooped with their chickens, and that a safer course would be to hatch the eggs under a mother of less rough *physique;* but Mr. Dixon very pertinently asks, how the hen is to be employed when the sitting fit comes on, for they are persevering sitters. We have never seen the dangers realized; and since neither worrying, nor whipping, nor fettering, nor physicking, nor the application of the *douche,* or the cold shower-bath, will subdue the natural instinct to sit, they should be allowed to follow their instinct, and incubate in peace. Besides, such barbarous and unnatural restraints would be intolerable in our free

country, where the matronly rights and privileges of our female fowls, whether blacks or whites, of all shades and complexions, must be respected. And such casualties, moreover, have not occurred within our own limited range of observation, nor are we discouraged, from dread of such experiences, to persevere in keeping unmixed (coloured) Dorkings, in preference to any other species of poultry, while we aim at practical benefit in the family economy, rather than the indulgence of a fanciful and capricious taste. Nor would we mutilate the claw by lopping off the offending excrescence, either from the delusion of *improving* upon the work of the Creator, who, when he had summoned into existence every "winged fowl after his kind," saw that it was good, or from the whimsical, and not entirely humane, suggestion which a correspondent of the *Agricultural Gazette* has recommended for marking poultry, so that they shall not be stolen without the danger of detection. The probability is, that this apparently superfluous membrane would, if subjected to the scientific analysis of such men as Lord Brougham and Sir Charles Bell, be found to subserve some good design—though ordinary mortals may not have discovered it, nor perhaps have sought its purpose with careful research.

The Dorkings are among the heaviest of our fowls when fat, as their frame-work is not of that lengthy, incompact structure which it is so difficult to fill up with flesh and fat; they much sooner become tempting figures for trussing and skewering than other fowls.

The prize list will show that the Dorkings attain considerable weight; many cocks and hens have weighed respectively from eight to ten pounds, live weight; and no bird is better formed, or has more aptitude for fattening when rendered capons, than this variety of fowls, which will attain eight or nine pounds. A *young* hen in our yard at present, and only just moulted, weighs seven pounds.

POLISH FOWL.

The Polands.

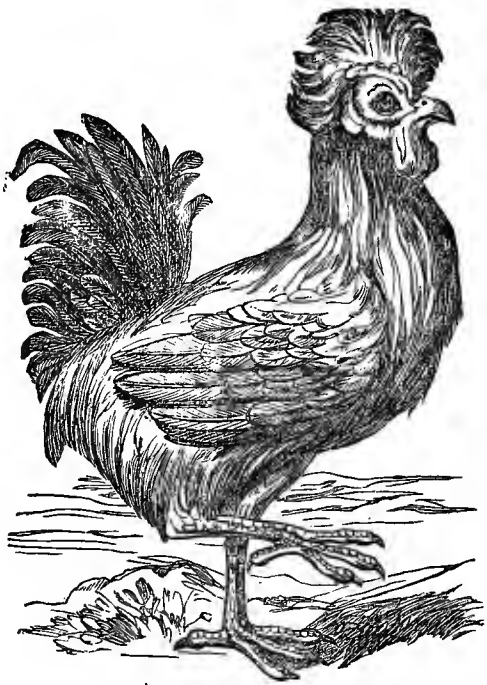
Gallus Patavinus, Linnæus; *Le coq de Caux,* ou de Padoue*, Buffon; *Paduan cock*, Willughby.†

All the crested kinds seem to have had a common origin. The genealogy of the Polands, however, has not been satisfactorily traced to its original. All that we know of them may be collated thus:—Aldrovandus, an Italian, who wrote in Latin about 260 years ago, gave two rude woodcuts on folio pages, intended to represent the Patavinian or Paduan breed, which he describes, and which it has been conjectured are true types of the Polands:—"There are kinds of the gallinaceous order larger than ours, which are commonly called Patavinians. We present the pictures of the male and female. The cock is exceedingly beautiful, being richly decorated with five colours, viz., black, white, green, red, and ochre; but the body was black, the neck was covered with perfectly white feathers, and the wings and back were partly black, and partly green; the tail, also, was of the same hue, but the bases of the wings were whitish; some of the flight feathers were white in the higher parts; a red circle surrounded the eyes; the comb was very small; the

* A district of Normandy under the old *régime*.

† Latham's "General History of Birds," vol. viii. p. 196.

bill and feet yellowish. In the hen there was no white, except the usually white pellicle at the orifice of the ears; she was altogether of a greenish black; the feet light yellow; the comb very small, and slightly tinged with red."* He also says that the plumage of the cock will now and then assume a golden hue.



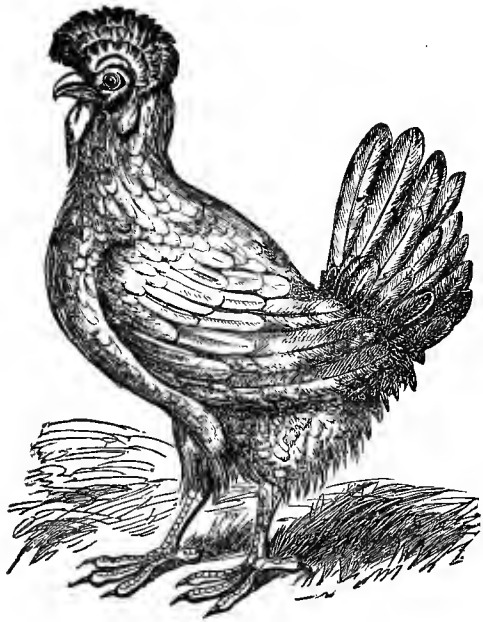
PADUAN COCK.—(*From Aldrovandi.*)

Commenting on this description, Willughby says that Aldrovandus describes a Paduan cock and hen which ought rather to be called a Pulverara, from a village near Padua where they

* Aldrovandus, "De Gallinis Patavinis," cap. 4.

are found; but they differ in no part from the common fowl, except in being larger and finer.

It is remarkable that one of these birds has a beard or muff, and that the other is without it, a circumstance which might lead us to suppose that they are types of two different races.



PADUAN HEN.—(*From Aldrovandi.*)

Our artist has drawn these likenesses of the birds, on a very reduced scale from that of the gigantic originals. They bear such strong resemblance to our Polands, as to render their identity very probable.

Whence did the Paduans come? Cuvier says that the Paduan cock or *Gallus Patavinus* is a variety or descendant of the *Javan* cock (*Gallus Giganteus*) described by Temminck.

Now, though we may dismiss Aldrovandi as uncertain authority, as he deals more in the anatomy of birds and their uses or adaptations, than in their natural history, and in the medical and surgical treatment of them, bringing fables to his aid, Cuvier and Latham are to be respected, and they seem to consider the Polands as branches of the Javan family.

Let Buffon now speak:—"The distinguishing character of this fowl (the Paduan) is its great size. It has frequently a double comb, shaped like a crown, and a tuft, which is more marked in the hen. Their voice is stronger, deeper-toned, and rather harsher, and their weight is from eight to ten pounds, so that they appear to have sprung from that beautiful race the large cock of Rhodes, Persia, and Pegu, in the warm countries of Asia, considered as the original stock of all the fowls of these countries. But as there is no wild cock perfectly resembling our domesticated sorts, we cannot tell to what race or varieties we are to ascribe their origin. * * * But of the six, to which we may reduce the race of our common fowl, three owe their peculiarities to the influence which the climates of Hamburgh, Turkey, and England (and perhaps to a fourth and fifth country), for the Caux fowl has come in all probability from Italy, since this is also called the *Paduan*."*

The origin of the Poland fowls is not satisfactorily determined. They may have been first imported here from Poland, as an intermediate country, but more probably from Holland. A plausible reason assigned for the name of Poland, is the fanciful resemblance in form between their crest and the

* Buffon "Nat. Hist.," "Ornithologie Complète," par C. S. Sonnini.

military cap of the Polish soldier. The clipping of this crest has been recommended, but this appears unnatural and needless, unless it should decidedly obstruct their vision by hanging over the eyes. Temminck, a great authority, has pronounced that they have descended from the wild gigantic cock of St. Jago, a native of Java and Sumatra. Marsden relates that he saw a cock of that breed in Sumatra, which was tall enough to pick crumbs from a dining-table. This must have been, we suspect, a nursery-table, for the weight of the bird is stated to be only eight or ten pounds, which Cochin-China fowls of no extraordinary size weigh; and we have seen none of these tall enough to wait at a usually sized dinner-table. The large-size cock of Sumatra, in the Edinburgh Museum, is not much above two feet four inches;* but the plumage of this bird is varicgated with pale golden-red, chestnut brown, yellow and glossy blackish, and iridescent green, which are very dissimilar from the hues of the Polands; and though there is a tufted crest of feathers, it wants so many of the marks and tokens of the Polands, that these cannot boast of their descent from such a brilliant ancestor with any strong probabilities. South America, where crested fowls are said to abound, has also been assigned as the birthplace of the Polands.

Mr. Baily thus describes the general characteristics of the Polands in his treatise on fowls. "The crest of the cock is composed of straight feathers, something like those of a hackle, or saddle; they grow from the centre of the crown, and fall over outside, forming a circular crest. That of the hen is made up of feathers growing out and turning in at the extremities, till they form a large top-knot, which should in shape resemble a cauliflower. The comb of the cock is peculiar, inasmuch as it is very small, scarcely any

* Sir William Jardine.

on the top of the head, and having in front two small spirals or fleshy horns. The carriage is upright, and the breast more protuberant than in any other fowl, save the Sebright bantam. The body is very round and full, slightly tapering to the tail, which is carried erect, and which is ample spreading towards the extremity in the hen, and having well-defined sickle feathers in the cock. The legs should be lead-colour or black, and rather short than otherwise."

A breed of White Polands with black tops, which must have been beautiful, has long been extinct. It was described by Aldrovandi; and known in France when Buffon wrote. Perhaps the enthusiasm and perseverance of poultry amateurs will effect their re-appearance by importations from Asia, or by experimental crossing.

The varieties among us are the Black; the Golden Spangled; and the Silver Spangled.

Black Polands.—Cock: body, neck, and tail, black, with metallic tints of green; crest, white, with a few black feathers at the base of the bill; comb, very small, consisting only of two or three spikes; large wattles, bright red; ear lobe, white; the skull, instead of being flat as in other varieties, has a fleshy protuberance or round knob.

Hen: the same colours; wattles smaller than those of the cock; in other points the same.

Golden Spankled.—Cock: ground colour, very bright ochre yellow, black spangles, which, in a particular light, have a beautiful greenish tint; crest, chestnut, with a few white feathers; black beard; comb and wattles small; hackle and saddle feathers, golden yellow; thigh, generally black, but some specimens have them spangled; sickle feathers, dark brown and very large, the smaller side ones lighter in the colours, and beautifully faced with black; legs, slate colour.

Hens: general colours the same; breast, neck, and back, spangled; tail and wing feathers, laced.

Silver Spangled.—The only difference between this variety and the preceding one is in the ground, which is a beautiful silver white.

Mr. Dixon sums up his description of them thus:—"They may certainly be ranked as the choicest of fowls, whether we consider their beauty or variety. A variety has been produced of a dun-coloured ground; and another, not however established, with a globe-shaped white crest."

The cock of each of the above sorts should weigh about five pounds, and the hen four pounds. As to beards in the spangled varieties, there are differences of taste among amateurs. Who shall decide? A discussion of this kind, which is truly a splitting of hairs, carries with it the air of the ridiculous. It reminds us of the Big-endians and Little-endians in Lilliput.

The silver variety, says Mr. Dixon, will sometimes make its appearance among the golden sort, as from the Black Polish beautiful white chicks occasionally proceed, which albinos are much too delicate to serve as the stock of a separate breed.

Another variety also has rather recently been raised, which obtained a prize at a Poultry Exhibition in the Zoological Gardens, but of which we have not yet obtained an accurate description.

There are sub-varieties of the Polands, but they are as yet little known, and not noticed at all in Mr. Baily's treatise; this omission indicates their obscurity or worthlessness, or both.

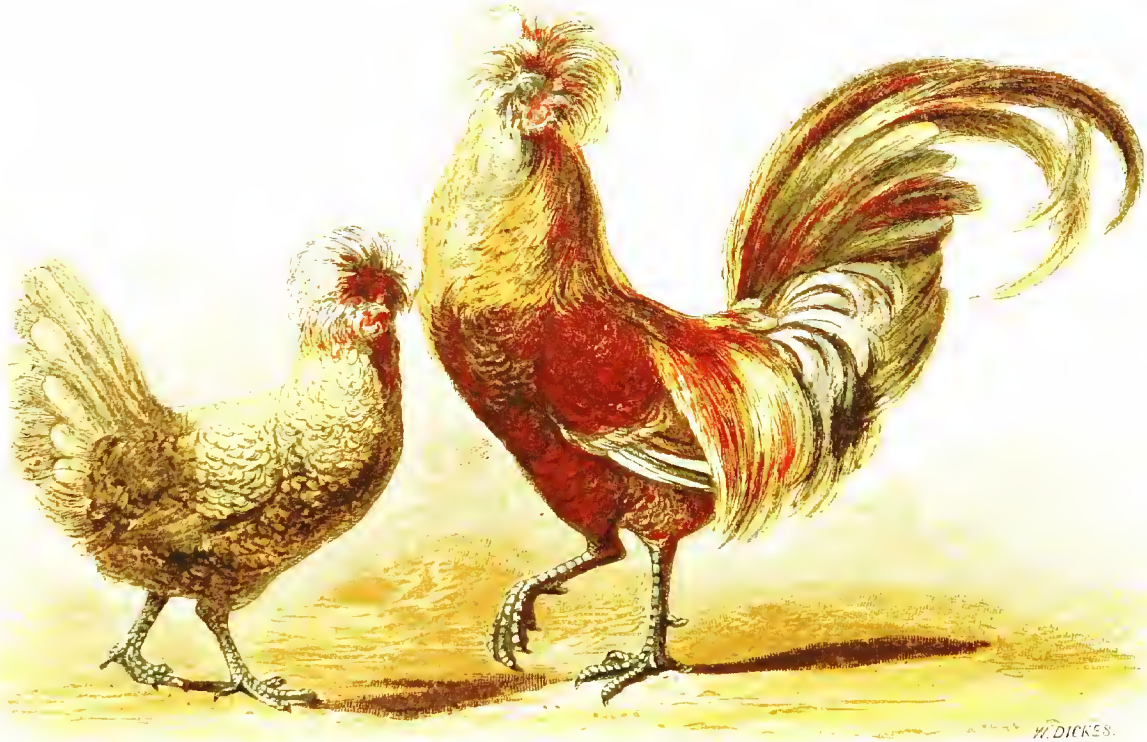
A slatey dun-coloured kind is possessed by some breeders, but we have no farther particulars of it, than that the plumage is of a uniform shade.

The Polands are excellent layers of perfectly white and moderately-sized eggs, much pointed at the smaller end. As to their nursing dispositions, Mowbray says, that though one of the most useful kinds on account of the abundance of eggs they lay, which has entitled them to the appellation

of "everlasting layers," they are less inclined to sit than any other breed. But Dixon says, that when they sit they acquit themselves respectably. This, however, is faint praise; and altogether it is judicious to put their eggs under other nurses. The chicks of both sexes, which are hardly distinguishable for many weeks, are very ornamental. The male bird is first distinguished by the tail remaining depressed, awaiting the growth of the sickle feathers, whereas the female carries it uprightly from the first; also, the top-knot in the cockerels hangs more backward than in the pullets.* And this curious physiological fact is noticed by the same critical and intelligent writer; viz., the Golden Polish cock engenders as true Silver chicks (and those stronger) with the Silver hen, as the Silver Polish cock would.

The beard which is often seen on the Gold and Silver Polands, has given rise to some discussion. As an appendage, indeed, to the females, we may undoubtedly pronounce it disfiguring and unfeminine, and we are disposed to consider it a mark of low-breeding; but whether this be so or not, we cannot venture to determine. Mr. Baker, of Chelsea, of undoubted experience, says that the thorough-bred Golden or Silver Poland is without this beard; but Dr. Horner, of Hull, a writer in the "Agricultural Gazette," asserts that on the continent all the pure Polands of both sexes have beards; and his own experience, he says, confirms this. He imported several Polands from the continent, and found the beardless miserably inferior to the bearded ones, in carriage, plumage, and shape; their top-knots comparatively small, necks meagre, and their gait undignified; and altogether so deficient that he could have selected the bearded from the beardless, even if their throats were concealed. This gentleman, who

* Dixon.



POLISH FOWL

is possessed of both sorts, maintains that the beard of the varieties under consideration is a natural, and (in them) a becoming appendage, suiting admirably with the top-knot, the full and lengthened neck, and flowing hackles.

Dr. Horner conjectures that the beardless is a mongrel between the Poland and the Spangled Hamburgh. In this point, however, we may observe there is now before us a hybrid between a Golden Poland and the Golden Pencilled Hamburgh, and that this hybrid *has* a beard. It has the rose comb of the Hamburgh, and the top-knot of the Poland. The parent cock, we believe, was a Hamburgh, and the hen a bearded Poland.

His observation that a thorough-bred bearded Poland always produces a bearded progeny, may be correct; and the case we have just mentioned tends to corroborate it, as the beard of the parent hen has been transmitted to the offspring of another and a beardless tribe. In further proof of his opinion that beardless Polands are a mongrel breed, Dr. Horner says, that not a few of the cocks bred from beardless Silver Polands, have the rose comb of the Silver Spangled Hamburghs. He further states, that his crossing of bearded with beardless Polands, cock with hen, and hen with cock, has, in a great majority of cases, produced a very degenerate progeny, with small top-knots, thin necks, and other deficiencies.

It is remarkable that one of Aldrovandi's pair has this beard, and the other is without it; but it is not certain that they represent Polands, or that they themselves were of the same tribe, therefore nothing can be concluded decisively from these types.

Now, Mr. Dixon condemns the beard as a decided mark of impure blood, and great disfigurement, and he appears to infer that where the beard appears, it is an evidence of a cross with some variety of the Hamburghs; and he notices

the figure of a cock of a peculiar breed, which is brought from Hamburgh, with a top-knot, beard, and *whiskers*. He says, "It is a frightful appendage, and not easily got rid of if once introduced into a poultry-yard, which makes me suspect either that the original Polish were beardless, or that there were two ancient races."

If it be a fact, according to Mowbray, that the imported Polands have been uniformly black, the coloured varieties of the tribe which we possess must have been produced by crossings, either accidental or designed, with some other races. And if, according to the sentiment of M. Réaumur, enthusiastic florists—we would instance those especially who are affected by the mania of propagating the briefly-flowering tulip, and who procure it but for a few days by anxious solicitude continued through a whole year—are so much affected by the varieties of colours in their favourite flowers, how much more pleasure is the poultry-yard capable of affording to persons who have taste and sensibilities for the admiration of fine combinations of colours, which may be constantly contemplated! May we not compare the former to the evanescence of the prismatic tints of a rainbow, which are exhibited for a few moments, and then dissolve away, like the painted scenery of a diorama?

M. Réaumur relates a curious case of a hen which had the predominating hue of one of our ordinary Polands. She had become almost black, with a few white spots, from a previous reddish brown; after the second moulting, black prevailed through the entire plumage; but after the next moulting the black spots entirely disappeared, and the hen became perfectly white. As she was then ten years old, the blanching of the plumage might have been attributed to old age, as it whitens the human hair; but in that case, says Réaumur, the transition from the ruddy to the black ought not to have been as it was, through the white. Whether his expectation that the

old dame might again change her colour, if she lived, to brown or black, was realized or not, we are not told.*

The same acute observer makes interesting remarks on a cock, which, during five successive moultings, changed his colours, from brown and whitish to uniform black, and then to uniform white, and afterwards to variegated brown hues; from which it would follow that the whiteness was not the result of old age. So many changes of dress had this cock assumed, that his master, on one occasion, did not know him after an absence of two months.

If it be true that the imported Polands have been uniformly black, the coloured varieties which we have, must have been produced by cross-breeding with other tribes in this country. All the crested kinds seem to have had a common origin; and crossing must have produced, besides the three generally recognised sorts of Polands, above noticed in detail, the blue Poland, and any others prized for their ornamental head-dress.

Where several sorts are kept in the same poultry-yard, it is difficult to prevent their intermingling, which produces patched and piebald offspring. The crest, however, the glory *par excellence* of the Polands, can never come amiss. Mowbray says, that when it is too large, and falls over the eyes of the bird, so as to render it liable to sudden alarm, it ought to be clipped.

The more marked contrast between the colour of the top-knot and plumage, the more attractive the bird. A white top-knot on a black ground, and the reverse order—hardly procurable, however, in the Polish breed—is beautiful. The black top-knot on the white ground is, we fear, lost.

The Lark-crested fowls, though not identical with the Polands, may, in compliment to their top-knots, be inciden-

* See Boswell's "Poultry-Yard."

tally noticed here. They have sometimes, by mistake in the heraldry office of poultry, been confounded with the others as of the same family, which they are not, though using similar crests. Mr. Dixon, our favourite authority, distinguishes the Lark-crested from the Polands by the former having an occipital crest, the latter more of a frontal one; which in plain words, for our non-anatomical readers, means that in the former breed the crest is towards the back part of the head, and in the latter, more towards the forehead. In the Lark-crested, he says, a single upright comb sometimes almost entirely takes the place of the crest. The white variety he pronounces to be in every way preferable to the White Dorkings, and very pretty when rambling about the homestead; and not only this, but what appears indeed an excellence to dealers in poultry, an *old* bird of this kind, properly trussed, will *look* as delicate and clear in the skin and flesh as an ordinary chicken. As he avoids direct allusion to the tooth test, we must infer that the flesh of an old fowl of this family is as tough as that of others. The hens have less distinguished crests, and are sometimes condemned to wear but half a dozen feathers in their head-dress. Their merits as layers and mothers, more than their crests, and general neatness of appearance, render them favourites with poultry housewives. There are, no doubt, many mongrels descended from the Polands or Paduans. The merits and demerits of the Polands are fairly stated by the same observant author. We shall give an abstract of his remarks:—

Their flesh is excellent, being white, tender, and juicy.

Without any cross-breeding, they will occasionally produce white stock, which is pretty (and through which, we suppose, the almost extinct kind might be recovered). As aviary birds,* they are unrivalled, and their plumage, when minutely

* We vainly searched for them, however, in the Zoological Gardens, Regent's Park.

examined, exhibits much beauty, which would probably be increased by the confinement of a handsome brood on the aviary system, in the course of which the successive moultings would improve.

During three or four years the cocks in particular increase in size, hardihood, and beauty, differing in this from fowls generally, which advance much more rapidly to their highest points of perfection, but from which they fall away with corresponding rapidity.

Several experienced breeders of the Polands certainly consider them as extremely tender, and so difficult to rear that the eggs should not be set before the middle or latter end of April, even in the most favourable districts, as dampness is fatal to them while very young.

Mr. Baily suggests a precaution and mode for detecting deformity of back, to which the Polands are prone: to lay the palm of the right hand flat on the bird's back, by which any irregularity of either hip, or a curve in the back-bone from the hips to the tail, will be detected.

Besides a little pepper mixed in scalded water with their chopped eggs or barley meal, chamber lye for a few days is recommended by one of our valued correspondents, as a restorative for the chicks if they droop. They should be kept under cover in a barn or other outhouse for six weeks.

If they live to be adults, no fowls are more hardy or profitable as layers, or more delicious for the table.

As the Polands are so frequently seen in our poultry-yards, it may be inferred that they have more good qualities than some of our friends have attributed to them.

Their demerits, as we collect, are few, and of no serious importance. They are, however, not suited to dirty farmyards, "becoming blind and miserable with dirt," and they require a clean and grassy place (so do all the gallinaceous tribe), in which their feathers will not be drabbled. They do not lay

quite so early in the year as other tribes, and are not suited for the offices of mothers and nurses, from their great disposition to lay; and when they do sit, they are rather unsteady and perverse. Now these objections may be dismissed, because there is nothing to prevent the substitution of proxies for hatching of a more operative class; and if the Polish hens and pullets themselves in the mean time lay eggs, there is no loss in an economical point of view.

We have good practical authority for stating that the critical period of their lives is from the second to the sixth month.

A black Poland hen is reported to have laid a hundred eggs, with little intermission, and then to have hatched and nursed a brood, and subsequently to have laid twenty-five eggs before the moulting season. Of the Golden Polands, Mr. Dixon further states, many make excellent mothers, though they do not always sit early in the year; and that the Silver acquit themselves respectably when they sit. This is not saying much for them; and, on the whole, it is better to leave the hatching to hens of a more established character for that interesting employment.

To the musical ear—we still refer to the agreeable originalities of our most valued author—the crow of the Poland may not be melodious; yet they are not harsher than those of some other races which come from the land of song and music—for instance, the Andalusian, which might be supposed to bring harmony with them. In truth, the Poland crowing is not "that of the noble Cochin China—deep-toned, mellow, and prolonged, like that of the closing note of an accomplished singer." If we pursue our fascinating guide farther at present in this strain, we shall imagine ourselves musical, and like the crow in the fable, pique ourselves on possessing the voice of a nightingale.

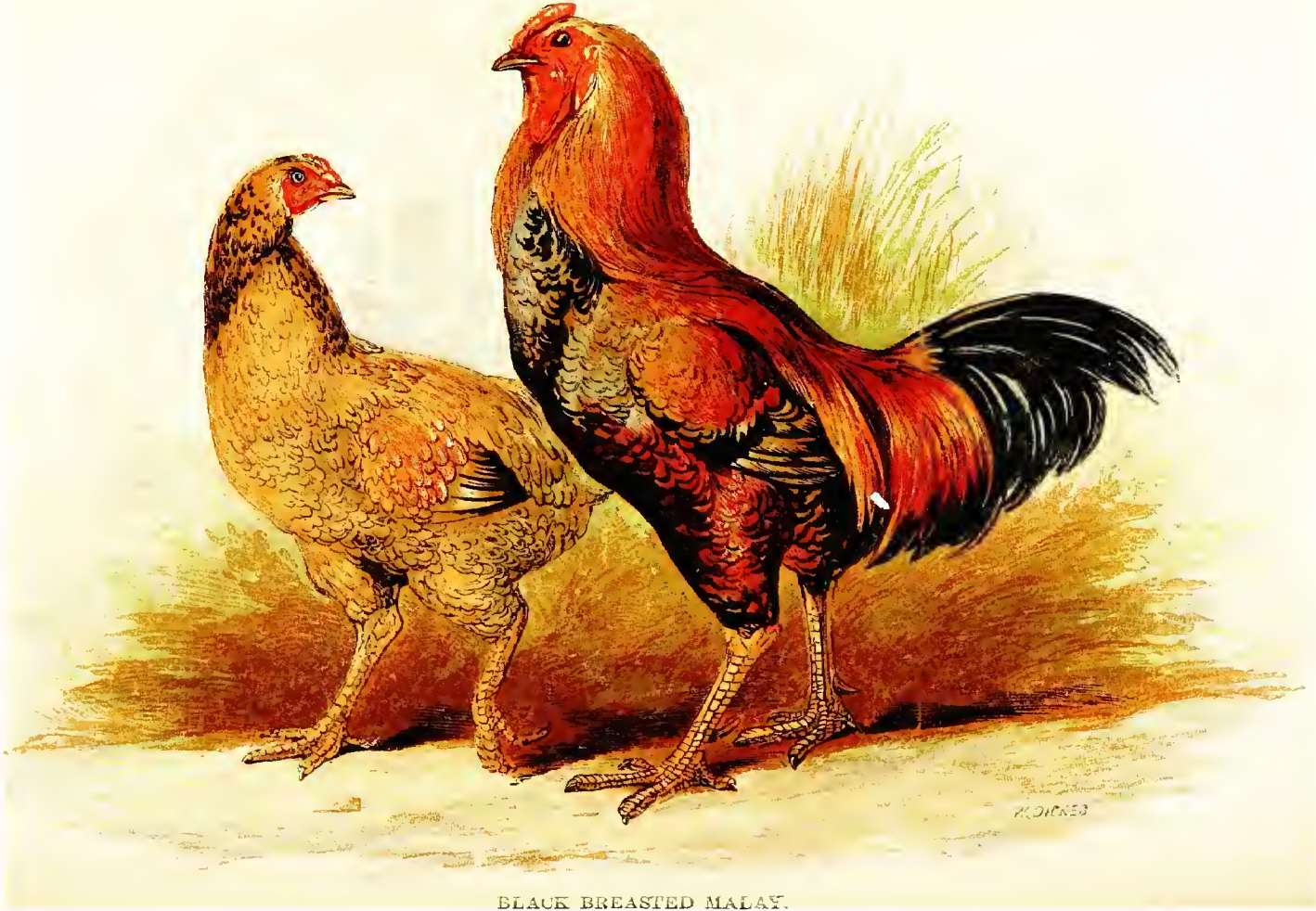
May we not trace the Poland race from the large cock of

Rhodes, Persia, and Pegu, and from the large hens of Bahia, which do not begin to get their covering of feathers until they have attained half their size? The Caux chickens, or Paduans of Buffon, are slower in feathering than common chickens, and this is characteristic of the Polands. But it must be remarked, that a great number of birds spoken of by travellers under the name of cock or hen, are of entirely different races; and amidst so many, how shall we discover any primitive stock? So many circumstances have exercised influence on those varieties, so many fortuitous occurrences have concurred to produce them, even the care, and even the whims of mankind have so multiplied them, that it would be very difficult to arrive at their first origin, and to recognise in our poultry-yards, Nature's fowl or even the fowl of our climate. The wild cocks found in the warm countries of Asia, may be considered as the original stock of all fowls in every country; but as there does not exist in our temperate countries any wild bird perfectly resembling our domesticated fowls, we cannot tell what race or variety to consider the primitive one. The Caux fowls are, according to Buffon, above the size of ordinary fowls. The Caux breed of fowls probably comes from Italy, since it is also called the Paduan fowl. We may consider the common and the crested cock as the natural races of our country: but in these two kinds, the hens and cocks are equally of all colours; the fixed character of the crested should indicate perfection in that race, that is, that it has been more carefully bred and reared.

Though this is not satisfactory as to proving that the Polands are Paduans, it shows that this great naturalist considered that the crest was a distinguishing mark of aristocracy. He considers, too, that the *white* fowl is the first of its species, the black intermediate, and then coloured varieties. The white or more primitive sort of the Poland

is gone—we have the black and coloured ones. Degenerate tribes are perpetually arising from the Poland as from other distinguished gallinaceous families.

The tufted fowl differs from the common sort only in having a tuft of feathers rising from the head, and generally a small comb, which may be accounted for by assuming that the tuft is nourished at the expense of the comb. More care has been bestowed in the breeding of the tufted race, than in that of any other sort; and numerous distinctions have been pointed out, especially in the plumage of this breed, according to which a multitude of sub-varieties has been named, and prized as the colours are rare or common; namely, the golden and silvered, the white with a black, and the black with a white tuft. Buffon enumerates, after the foregoing remarks, of which we give the substance, at least ten supposed kinds, but with the judicious doubt whether they were sufficiently established to be considered real varieties. The correctness of his judgment has been proved by experience.



BLACK BREASTED MALAY.

The Malay Fowl.

It is impossible to trace the fowls which we call Malays, and their sub-varieties, to any particular type of those Indian aboriginals from which we believe that the races to be described under the above head have been derived. Notwithstanding some testimony published by the Zoological Society, to the effect that many of the domestic fowls of the Indians are hardly distinguishable from the *Gallus Sonneratii* (found by Sonnerat in the jungles of India), we cannot venture to consider it with any great probability as the original of the Malay races familiar to us in this country.

There is another wild species which the Malays of Java call *Ayam-alas,* distinguished particularly by its forked tail (the *Gallus furcatus* of Temminck), quite distinct from their *Ayam Bankiva,* and from *Ayam,* which is their name for the tame cock. As this sort will pair at times with the domesticated hen, it is easy to understand how many varieties of fowls may exist in that part of Asia, and how difficult it is for us to ascertain what breeds of Malays, or so-called Malays, we possess.

Though the laws of capricious fancy may dictate a certain plumage as that which alone can stamp high and pure breeding, the fact we believe is, that there is such a variety of colours in these birds, excepting the entirely black and the perfectly white, that it is very difficult in many cases to say whether individuals of the variegated kinds, asserted to be

Malays, have a clear right to this distinctive designation. The black Malays have something of the air of the Spanish; and the white, with their yellow legs, have a genteel look, indicating good breeding. Formerly the Malays were an esteemed and fashionable breed; their slim and stately form, however really inferior to that of the game fowl, rendered them favourites, until, in the spirit of that progress which gives such character to the present times, better sorts of fowls have been introduced, combining real utility with beauty, symmetrical form, and handsome plumage. The Malay race is, however, still a favourite with many breeders, and good judges, too, both in England and Ireland. In the latter country, Mr. Nolan has been distinguished as a successful breeder of these fowls, which he produced, in the first instance, direct from their native country, and which, according to his statement, have been "the progenitors of all the fine Malays he has since dispersed through Great Britain and Ireland." His first pair were reddish yellow.

The Malay Cock is tall, about twenty-seven inches in height, and very erect, by no means of robust form, yet not wanting in weight; the comb not extending the whole length of the head and small, but from its breadth and apparently compressed flatness, appearing as if originally double, but artificially flattened down; wattles insignificant; the bill (which is a little hooked) and legs yellow, the latter being quite free from feathery hair or flush, and exhibiting, like the game breed, cross streaks of a dark colour along the legs and toes; hackles red and orange;* wing coverts lustrous brownish black; flight feathers occasionally exhibiting spots of white on the outward web of the quills; belly, thighs, black also; sickle feathers (which are rather short), dark glossy green. Yet the colours of Mr. Ballance's cock†

* Dixon. † This bird weighed eleven pounds three quarters.

exhibited at Birmingham, where a prize was awarded to it, has a different plumage, if, as is probable, it corresponds in colours with those which are stated in a recent work, to be characteristic of this breed, which is so varied in plumage, viz., dark chestnut or vandyke brown, approaching to black on the breast and back, with hackles of brilliant maroon on the upper side, and yellowish tint underneath.

Mr. Ballance has described some peculiarities of the race thus:—"The feathers of the neck do not become more ample and longer as they approach the shoulder; consequently the long neck appears of the same diameter at the shoulders as it does at the throat. This contrasts it remarkably with the game and all other breeds of our fowls." He had cocks two feet nine inches in height, and measuring, from the point of the toe-nail of the middle toe, to the point of the toe-nail of the hinder one, six inches and a quarter.

The Malay Hen.—The plumage which in the male is almost black, has in the hen more of a dark brown shade, and the lower parts are generally of a lighter hue; the same uncommon style of comb, on a small head; long neck, with the feathers of uniform length as in the male; the tail feathers five on each side; stately carriage. The Malays are not to be recommended in preference to those races to which precedence has been given in this work; nor have they any just pretensions to preference: their length of body and legs renders them undesirable for the spit; they are of delicate constitution in youth, described by one* familiar with their peculiarities, as born strong, but half-naked, and therefore very susceptible of cold and wet, when they are one-third grown, the increase of their bodies so much outstripping that of their feathers. If propagated at all,

* Dixon.

then, they should be hatched early, to be fully fledged before the frequent Midsummer rains. The flesh, too, has been much condemned, as stringy and ill-flavoured, and unpleasing at table from its yellowness of skin; but other very fine-flavoured fowls are also repulsive in this respect. The eggs are rich and well sized, and the hens lay and sit steadily; but as they are not shaped for sitting, they should be rejected for this service. They require much food.*

Mr. Baily says that the plumage of the Malay should be so hard as to feel as if it were but one feather, and that the original colours of the cock were a bright rich red, with black breast; and of the hen, cinnamon, either of one uniform shade or darker in the hackles. He alludes also to a former breed of Malays coloured like some of the game tribes; such, we fancy, as the coloured hen Malay in an edition of Mowbray: the cock in his plate is represented with neck hackles, body plumage, and wings, of dark purple, except an edging of white on the outer side of the quill feathers, and at the base of the neck hackles.

Light-coloured Malays are not uncommon—and of these Mr. Sayer, elsewhere referred to, has some of cream-colour, which, contrasting with his red and white varieties, has a very pleasing effect in the general grouping.

Our artist, we think, has succeeded in giving to the eye the angry and fierce expression which marks the Malay tribe, and shows their affinity with the pugnacious game race. Even the hens have as haughty a demeanour as that of the male bird, and are suspected of being, at times, peevish and turbulent.

Though it may, perhaps, appear very strange at first sight to

* It is to be remarked, however, that the Malays which were awarded the first prize at the London Summer Poultry Show this year, were bred with many others, in a town-yard fifteen feet square; proving, that with legs formed for rambling, they can bear confinement well.

suppose that the quiet and pacific Cochin-China and Brahma-pootra families, which are so much stouter of limb and larger of body, and so comparatively inactive, have descended from one or other of the great Asiatic jungle fowls, from which the Malays, and all their varieties, including the game breeds, have no doubt proceeded, we perceive a family likeness between the Malay and the Cochin-China races; the small, serpent head and long neck are remarkable in each. And this our impression has received greater confirmation from seeing a statement of Mr. Baily, to the effect that he would undertake to produce Brahma-pootras by pairing a Malay hen with a white Cochin-China cock. How the Cochins have acquired so much fluff about their legs and toes, which their supposed first parents had not, to our knowledge, is a little difficult of explanation. Certainly, we are not satisfied with the reason assigned by Buffon, that excess of nourishment may produce, in such instance, feathers in the legs and toes, as in other cases the juices of the body are expended in ornamenting the head with a tuft or hood. According to Temminck's theory, even our common cock, with its varieties, the Poland's crested tribe generally, the Bantams, the Dorkings, has sprung from one or other of two Asiatic aboriginals. We cannot hesitate in claiming an identical ancestry for the Malays, and classing them along with the Cochin-China and its kindred tribe, the Brahma-pootra.

In an interesting notice of this newly-imported kind, recently published in *The Field*, it has been thus observed:—"It bears so little resemblance to the Cochin-China fowl, that grey Shanghae appears to be scarcely an appropriate name to apply to it; we might as well call it a *grey Malay*. In size, and in the feathered legs, it is like the Cochin-China; but in carriage, it rather resembles the Malay. Again, it has the peaceable and docile disposition of the Chinese breed; we have never heard of its showing the quarrelsome

temper of the Malay, which would certainly appear if it had a partially Malay origin." Now, we venture to differ from our contemporary in the opinion he has expressed, and are disposed to class this family of fowls with the Shanghae tribe; but, considering both as having proceeded equally with the Malays from the same Asiatic original, we present their portraits here as family pictures, and not out of place, though their family history will be postponed until there shall be occasion for republishing that of their decided congeners, as we consider them, the Cochin-Chinas, as the best known, and most numerous and important branch of a distinguished race; they certainly have the form of neck and head which the Malays possess.

Mr. Nolan, to whom we have alluded as an experienced propagator of poultry, and to whom Ireland is deeply indebted for the practical good he has effected in improving the breed of them generally there, has written a letter to the editor of *The Field*, which harmonizes with our convictions:—"There are but two lots of Mr. Burnham's Brahma-pootras yet in Europe; he says the parent stock were imported direct from Shanghae (China), and he presented nine of their produce to the Queen. I am in possession of four from the same gentleman, which I imported from him, at considerable outlay, for my own gratification and public good. And why they should be, by some persons, 'torn to tatters, to very rags,' not even sparing those in possession of royalty, seems, to an Irishman, ungallant and unwarrantable. I admit, that some persons are ingeniously manufacturing birds to resemble them, from yellow pullets and grey cocks, but that is an imposition easily detected. I do assert, from my own experience, that the true grey Shanghaes, or Brahma-pootra fowls, are not only a distinct variety, but, from their large size, and unusually large-sized egg, beauty of plumage, and graceful deportment, they are

superior to anything before in our possession; and I can now speak from experience, as to their chickens resembling the parent birds to a single feather: not so with the coloured Cochins; you will find various colours in the same clutch, and as to their being Brahma-pootras, grey Shanghaes, or any other name, that is merely splitting straws; it signifies little what they are called; the question is, Are they of utility? My conscientious opinion is, that they are an improvement on anything we previously have had. Their skin is white and fine, their flesh white and juicy, and their eggs considerably larger than the Cochin's, and are laid in equal abundance."

We have seen Her Majesty's birds, to which Mr. Nolan refers, and could not question, as far as appearances went, their identity, except in colour, with the ordinary Shanghaes; but their grey plumage, with the points of the quill feathers edged with black, resembling the dark trimming of a lady's light-coloured robe, and falling away in the same style of curve, varied with streaks of black on the hackles, and the points of the tail black also, render them far more pleasing than the other sorts, whether of buff, Nankin, or cinnamon plumage. The head, as also in some instances the comb, and the general figure, certainly resemble those of the Malay. And, as regards plumage, there are birds of the Malay and Shanghae families by whose union such colours would probably soon appear.* But if, on the other hand, the test of like producing like for several generations should be successfully afforded by the Brahma-pootras, other grounds must be sought for by those who would consign this alleged variety to the comparative ignominy of a hybrid origin. The crossing of Malays with other races has been tried with the view

* At the Farningham Poultry Show, held in June 1853, a cock and two hens, a cross between pure speckled Dorkings and Malays, and closely resembling Brahma-pootras, were exhibited.

of improving the quality of their flesh. A large variety formerly known as *Shackbags*,* a hybrid between the St. Jago and Dorking, now extinct, was crossed with Malay hens, but the experiment did not succeed.

In the same work, we find the points of similitude between the Malay and Brahma-pootra described. "The cock when drawn up to his full height, measures thirty inches; the head and eye have much of the Malay character; the neck is full; the back is very short, and falling rapidly from the bottom of the neck to the insertion of the tail; the thigh and shank long; but the breast is very fairly developed, decidedly more so than in most Malay specimens."

A cross, exhibited by Mr. Howard of Bedford, at the Farningham Poultry Show last summer, between a speckled Dorking and a Malay, bore strong resemblance to the Brahma-pootras. If these birds be compared with the Malays, the resemblance in the serpent form of the neck and head, and sometimes in the comb, will be at once recognised, though in all other respects they so closely resemble the Shanghaes as to lead to the inference that they are varieties of them; both races having some Malay blood either remotely or recently infused. A cross between the Malay and the Shanghae may have produced them, though it is far more probable that they are Shanghaes, in which family we propose to place them in the revised edition of the first number now in the press.

Malays are not desirable in the colder parts of the United Kingdom; they require a dry and warm temperature more

* This appellation is said to be a corruption of Shakebag, and to have originated in a practice of making up game cock-fights without previous matching by weight and breed. The combatants were brought to the scratch in sacks by their owners, who speculated on the chances of victory for their respective champions without seeing the adverse ones. The bags were opened, shaken, and the duellists rushed at each other with or without equality of physical power as chance might have directed.

than many other breeds, and also are unlimited to poultry keepers who have limited space, either of house, yard, or pasture range: mere splendour of plumage, which high-bred Malays so eminently possess, ought not to tempt a sober-minded person to select them for ungenial localities, where the Dorking or the barn-door kinds would be far more appropriately kept. And as the chickens of this race, like their relations the Shanghaes, acquire their feathers very slowly, they ought not, even in our best domestic climates, to leave the shell before the commencement of summer temperature; nor to come into the world late in the season. Being of tall and uncompact form, and slow in attaining maturity, they require the best nourishment, and therefore, for this reason, and their impatience of close confinement, they are unfit for the cottager.

The Pheasant-Malay.—This name is perplexing. Some people imagine that this bird is a hybrid between the pheasant and the Malay fowl. But this is a great error, as the pheasant, properly so called, and the domesticated fowls, are different in species, though of the same genus: and, therefore, their hybrid progeny would be, according to a general law of nature, incapable, unless with rare exceptions, of propagating with the same family. But a crossing, that is, the union of one of such hybrids with another individual of a different and pure breed, would be productive of a new variety. The varieties of the pheasant have arisen in this way: a cock pheasant has paired with a poultry-yard hen; a brood of hybrids is the consequence; these birds, then, being mules, are incapable of reproducing amongst themselves, but, by being paired with individuals of a different family, they may produce a new and good variety. Science and experience are most necessary to enable the breeder to multiply or improve varieties. These, however, are not rapidly and easily raised; it is only by skilful attention to

the natural law, and by hybridising, crossing, and recrossing kinds, that improved varieties of any domestic animals are propagated, just as in vegetable physiology gardeners raise such continually increasing varieties of flowers and fruits.

It has been said and believed, in defiance of Nature's prohibitory law against such multiplication, that the union between the cock pheasant and common hens, kept in the neighbourhood of pheasant covers, has given origin to the Pheasant-Malay. Now, there is no doubt that such connections sometimes occur, when the pheasant is in a comparatively tame or domesticated state,—for otherwise such a *mésalliance* would not take place; and German authorities state, that such hybrids are common in their country, and excellent for the table; but they do not speak of the fertility of these hybrids. Indeed the assertion that such productions are frequent, is quite at variance with another dictum,* that, out of a hundred eggs of the hen after intercourse with the pheasant, it is rare to find more than two or three that produce chicks. And suppose one of these fairly hatched, and even reared, its appearance is unprepossessing in the extreme, for, according to Mr. Baily, it has neither comb nor gills, and consequently has a very silly look. It has a tail feather, however, longer than that of a fowl, but not shaped like that of a pheasant, and more upright. The colours he describes to be, in general,—back and wings, chocolate colour; breast, hackles, and tail, black; legs, dark. Mr. Baily kept a male hybrid of this kind, stupid as it looked, and quite inferior both to pheasant and fowl, for two or three years with his hens; and the only service this poor bird seemed capable of discharging, was patient attendance on the hens when they retired to lay; his custom being to mount on the branch of a tree, while they were on the nest. After they left it, he sat upon the egg, and seemed very

* See "Griffiths's Cuvier."

unhappy when it was taken away. It does not appear that the experiment was tried whether he would hatch a brood, for which service he showed such a commendable disposition. The description of this hybrid, be it remarked, does not at all correspond with that of the Pheasant-Malay, and affords some additional evidence against the idea that this fowl owes its origin to the pheasant parentage presumed for it by persons who have not studied the history of fowls, and the natural law which rules their multiplication. It can hardly be doubted that the Pheasant-Malay is a cross between the game cock and Malay; but whether imported into, or originated in this country, is a question.

The writer of an article, in a distinguished work, has expressed an opinion, that a hybrid between the pheasant and hen has succeeded. Commenting upon this, Mr. Dixon observes:—"The result of our inquiry is this, that hybrids between the pheasant and the fowl are, for the most part, sterile; that when they do breed, it is not with each other, but with the stock of one of their progenitors; and that the offspring either fail altogether, or assimilate to one or other original type. No half-bred family is perpetuated; no new breed created by human or volucrine ageney." Buffon relates a case of an attempted sexual union, contrary to the inclinations of the parties—viz., a cock pheasant, and that of pullets, resembling the pheasant as much as possible, in colour and form, kept and fed near each other; but the cock, true and faithful to his tribe and people, or, rather faithful to nature, killed several of the females when they were introduced to him, and he could scarcely be controlled by touching his bill with a red-hot iron. However, ingenuity triumphed in some of the cases. This naturalist was wrong, however, in adding, though on the authority of a royal gamekeeper in France, that the hens will not allow

wild cock pheasants to associate with them, for instances to the contrary are numerous and indisputable.

But here are marks and tokens, by which it will appear that the Pheasant-Malay is a distinct variety, and not owing its parentage to birds of a different species:—The hen of the Pheasant-Malay carries her tail in a particular upright and hen-like manner; the cock has the curved and flowing feathers of the tail, and every other mark of true gallism. The Pheasant-Malay hen has semi-oval markings on the breast, and shining blue-black hackle on the neck, mixed with dark brown, which do bear some distant resemblance to the plumage of a cock pheasant, and might give rise to the false notion of her origin; but a glance at the cock shows how nearly he is related to the game fowl; a closer inspection shows the affinity of both to the ordinary Malays."

The Zoological Society has been referred to as possessing hybrids frequently bred by them between the cock pheasant* and the fowl, but the barrenness of these hybrids among themselves has been unequivocal. And though the male pheasant, even when wild, has been known to associate with with the hens of the poultry-yard: this is contrary to his natural character; even the ring pheasants of China, in their native country, will not intermingle with the common ones.

The Silk Cock is shaped like the Shanghae (*Gallus Phasianus lanatus,* Linn.); has the whole body, according to Latham, covered with feathers (or more properly with soft down), the webs of which are so separated as to appear like hairs on glossy silk. Its other known and often described peculiarities are precisely those given to us by a lady who for many years had what she considered the same breed, but called them under the name of

Chittagongs.—They had been brought to her from India.

* The silver pheasant is said to be more nearly than the other kinds assimilated in disposition, form, and constitution, to the fowl.

GAME COCK BEATEN.

THE GAME FOWL.

They were of the usual size, of perfectly white plumage, more like spun glass than feathers;* skin purplish, flesh white, the periosteum or membrane that covers the bone, dark purple; comb small, and of rather purple hue; hairy feathers extending even to the points of the toes; and the chicks were even born with it. In habits these birds were like the other fowls, but of such voracious appetites that they would eat until their crops were distended as if by disease; nearly a cupful of wheat was taken from the craw of one which it was necessary to cut open in order to save the fowl from suffocation. The flavour was peculiarly good, the flesh rich, juicy, and mellow, to use her own description, and the eggs, which were of deep buff colour, most excellent. This lady had always been told that these birds (though answering the preceding general description of the *Silk* bird) were Chittagongs; and on the arrival of two gentlemen from India who visited her, and pronounced them to be true Chittagongs, she ceased to have any doubts (if, indeed, she had ever entertained them) on the subject. The flavour of this supposed Chittagong she considered more like that of the black cock than of common fowls. The Silky race is known over India, China, and Japan, but they are so scarce that the natives carry them about in cages, to sell them to the Europeans. The white sometimes breaks into different colours, brown of all shades, for instance, but the legs are indelibly darker coloured, though not always feathered, nor furnished with spurs. We dispute, however, this fancied identity of any sort of the Silky fowl with the Chittagong, which is probably a distinct variety, shorter on the legs, larger in the body than the Malay, and having a thicker or less fine head: plumage speckled grey, and beak yellow.

* But for this distinction we should have supposed them to be the white Malay, which, however, has some yellowish shade in the hackles. The darker birds are larger. The Chittagong pheasant of India is as large as a turkey; grey.

We by no means, however, assert as certain that the last-described bird is the true Chittagong; and we more especially disclaim the notion of pronouncing a dogmatical opinion on so doubtful a point, from perceiving that they are thus described in a contemporary work on poultry, by a writer who states that he has seen hundreds of them in the Indian bazaars. "The Chittagong, we are strongly of opinion, is a cross between the Malay and the Dorking; they bear about them strong marks of their cross lineage. They are usually pencilled, or spangled grey in plumage; but we have seen many with a mixture of yellow or brown upon the feathers; they have the Malay head and expression of countenance, but with more of the ample breast of the Dorking, and their legs are somewhat white; but not rarely yellow."

But this does not relieve our perplexity, for the question arises,—How did the Dorkings become a breeding stock in India?

It appears that one gentleman, known to have a very fine breed of Malays, was misled into the exhibition of some fowls as Chittagongs, as from the light hue of their colours, and the spangled breast plumage of the cock, he doubted their being what are more emphatically Malays, and designated them as Chittagongs. Thus difficulties affect the definition of what we vaguely term the Chittagong family.

An American writes of "the Malay or Chittagong,"—thus identifying them,—and describes them as usually brown or yellow, and sometimes almost black; the weight he states to be enormous—as far as British experience of this bird goes—from eleven to twelve pounds. It would appear as if these were more properly of the Shanghae family, more particularly from the great weight mentioned, to which the Malays known as such in his country do not attain.

Out of lists of the respective weights of various fowls furnished to Mr. Dixon by different individuals, it will appear

that the Malay breeds, as distinguished from the Cochin-China sort, do not weigh nearly so heavy; for example,—

	lbs.	ozs.
Pheasant-Malay cock	7	0
Ditto cockerel, five months old	7	0
Ditto hen	5	0
Ditto pullet, seventeen months old . . .	5	3
Malay cock, sixteen months old . . .	6	14
Ditto hen ditto	4	8
Pheasant-Malay cock	5	7
Ditto Malay hen, moulting	3	8

The Negro Cock (*Gallus Phasianus Nigris,* Linn.) is possibly another variety of the Malay; its combs, wattles, and the membrane that covers the bones, are black, and the plumage for the most part is of the same hue. The purplish colour of the legs in the Chittagong becomes a blackish violet in the Negro. This dark shade in the upper skin or *epidermis,* prevails in both, but it has a deeper tinge in the latter than in the former race. Writers are not unanimous in saying that the flesh is black.

The membrane which covers the bones of the Chittagong we have stated to be purplish; the transition to black in the other variety is probable: indeed, in some climates the negro fowl is called the Bastard Silk fowl; therefore, if we could assume the identity of the Chittagong and Silk fowls, it would appear that this Negro fowl is but a variety of them, and not a distinct species.

The plumage of the Negro is indeed black with bronze reflections (and that of the Chittagong is, at least in one variety, white), but this difference in colour is quite common, not only among varieties of the same species, but in the same families and the same broods from the same parents. In Her Majesty's aviary there are now some *black* and

coloured Cochin-China fowls of the same brood; therefore, such difference would go for nothing towards establishing the distinction of species, which Temminck and others are disposed to claim for them; but they may be quite right in their opinion notwithstanding.

Whether the Negro be or not, a separate species from the Chittagong or Malay, it is not desirable that its introduction into England should be rendered fashionable by our poultry-fanciers. A coal-black skin is not a very tempting envelope in Anglo-Saxon eyes for the flesh, however good this may be to the taste. Both sorts are met with in the provinces of Mozambique, in Africa, as well as in Malabar, Siam, and other Asiatic countries.*

The Malabar Cock is another Indian race, sprung from one of the great originals we have noticed. These birds are very large, with a plumage similar to that of the British game cock, and with very long spurs. The march of this bird is quite *à la militaire*. These birds are procurable at Doob, in India. The cock measures two feet in length, and hardly differs in comb and wattles from the specimens of fowls with which we are familiar. The colours of the plumage and legs, without going into minute details, are yellow, which predominates, and shadings of ochre. Although the cock has the spur which may be called a badge of the game or fighting breeds, the hen is not disgraced by having this masculine appendage.†

* On referring to Buffon, we find a curious notion expressed by him as to the causes of the perfect blackness of comb, wattles, skin, periosteum, and feathers frequently. He attributes the sable hue to the food of the birds. "We know," he says, "the effects of madder, milk, and curd, and that in England, the flesh of calves is rendered white by feeding them with farinaceous and other delicate food, which is found in the province of Bedford. It would be interesting, then, to observe at St. Jago, among the different substances on which these birds subsist, what is that which renders the periosteum black."—

† We are indebted for some of the foregoing matter to Latham's "General History of Birds."

At a recent sale of a very large and noble collection, reared by A. C. Sayers, Esq., Clanville House, Hants, some very fine Malays were sold, which had on previous occasions gained prizes at various shows. One of these, a celebrated cock, named "Ramridge," of remarkably dark plumage, and now two years and a quarter old, has obtained four first prizes, and an extra one, and is probably the most perfect bird of his kind in the kingdom. We do not exactly know what his weight is, but it must be very considerable, judging from that of some hens of the same breed, reared and sold by the same owner. Two distinguished ones, named "Caroline" and "Henrietta," overloaded also with prize honours, and about the age of the cock, weigh respectively eight and a half pounds, and eight pounds, and another hen has attained the enormous weight of ten pounds, which is equal to that of any Shanghae hen.

From a list of weights enumerated by Mr. A. Whitaker, his two-year old Pheasant-Malay cocks averaged but seven pounds each, and hens about five pounds; and probably these will be found fair averages, and above the average of the Spanish. Mr. Sayers, then, must be allowed the credit of having greatly increased the size and importance of this breed, and if he perseveres in progressive improvement, we may have satisfactory evidence that there is neither boastful exaggeration, nor unintentional error, in the report of a Philadelphian gentleman, who has astounded the world, by declaring that he has, or had, a three-year old Malay hen weighing thirteen and a half pounds; and that his good hens generally weigh from nine to ten pounds, and his cocks from eleven to twelve pounds. Now in this there is something to stimulate the energies of our great poultry-breeders, lest they should be beaten.

A singular habit has been observed in some of the Malay tribe, viz., that of taking a nap in the middle of the day,

after the fashion of human bipeds in some warm climates. It would not excite surprise in birds newly arrived from a land where the fashion of indulging in a *siesta* prevails; but an instance has been given of a supposed breed of Malays, imported by Lord Powis, which, after many generations naturalized in this country, retained and transmitted the habit. The instances of this, however, are not sufficiently numerous and specific to establish the fact that the Malays alone have it, and far less that it is really hereditary, or amounting to more than this, that in the noonday heat, if oppressive, fowls like to betake themselves to their roosts.*

Giving the most favourable consideration to their claims for selection as a breeding stock of full-sized fowls, and regarding their imperfections with the most indulgent forbearance, we cannot give them a preference over the other fowls which have been already described by us in detail, and some of those which are to follow in our contemplated order. Their eggs do not average more in weight than those of the Shanghaes and the Spanish. In comparing the claims of the superior breeds, it would be unjust to withhold the following summary of the relative merits of the principal ones.

"The greatest number of eggs in the year is laid by the Scotch Russian cross with any of the best common breeds; and the next greatest number is laid by the Dorking, the Poland, and the Spanish. The *largest* eggs are laid by the Poland and the Spanish; the next largest by the Dorking. The finest-flavoured eggs are laid by the Game breeds, and by the speckled varieties of the common breeds. The *flesh* of the Game breeds, the Spanish, and the Dorking, is the most delicate; and that of the Malay is coarse and inferior."†

The following table affords a correct standard of the relative weight and heights of first-class specimens of the

* See Dixon, p. 302.

† *Rural Cyclopædia*, edited by the Rev. John Wilson.

most-prized birds; by which it will be seen that the Malays are the tallest and the heaviest; but, "'Tis not the biggest but the best we prize;" and the prize of excellence lies, no doubt, between the first and second names on the list.

LIVE WEIGHTS AND HEIGHTS OF THE MOST-PRIZED FOWLS.

	Maximum.	Average.	Height.	Average Weight of Eggs.
Shanghae Cock, full-grown.....	12 lbs.	10 lbs.	26 in.	
„ Hen.....	9	7	22	2¼ oz.
Dorking Cock.....	10½	8	22	
„ Hen.....	8	6½	16	2¾
Spanish Cock.....	7	6	22	
„ Hen.....	6	5	19	3
Malay Cock.....	13	10	28	
„ Hen.....	10	8	20	2½
Polish Cock.....	6	6	21	
„ Hen.....	5	5	18	2¼
Game Cock.....	6	5	20	
„ Hen.....	4½	4	15	2½
Golden-Spangled Hamburgh Cock	6	5½	18	
„ Hen	5½	4½	15	1⅞
Golden-Pencilled Hamburgh Cock	5	4½	17	
„ Hen	4	3½	14	1½
Bantam Cock.....	20 oz.	16 oz.	14	
„ Hen.....	15	14	12	1

NOTE.—A Buff Shanghae cock was exhibited at the Cheltenham Poultry Show, in June, 1853, by Mr. Cattell, which weighed 13 lbs. 9 oz., and was stated to have weighed 14½ lbs. a few weeks before. Mr. Fox (May, 1853) had in his possession five Shanghae hens, weighing respectively 10 lbs. 8 oz.; 9 lbs. 8 oz.; 10 lbs. 4 oz.; 10 lbs. 4 oz.; 9 lbs. 4 oz.—See "Cottage Gardener," No. 242.

THE FRIZZLED COCK.

This tribe cannot be properly ranked among the family of Malays at all; but as it is from the same part of the Eastern World, and may have derived some portion of blood from the same original stock, though the gradation of lineage be untraceable, we name it here. It is found in Java and all Southern Asia, and is remarkable from having the feathers reversed and curled outwards. Mr. Nolan gives the hens an excellent character, as hatchers of the Game Fowls, Pheasants, Partridges, Grouse, Black-cock, and Ptarmigan; and as of very hardy constitution, and therefore very easily reared. The chickens, though apparently half-naked, have a downy covering under their growing feathers, which serves the purpose of a close-fitting flannel waistcoat next the skin, and keeps them warm, though the outward clothing of feathers be of thin and open texture.

The cock weighs about six pounds, and stands eighteen inches high; and the hen is nearly as heavy and tall. Their plumage is very varied; but the true primitive type is white.

THE RUMPKIN, OR TAIL-LESS FOWL

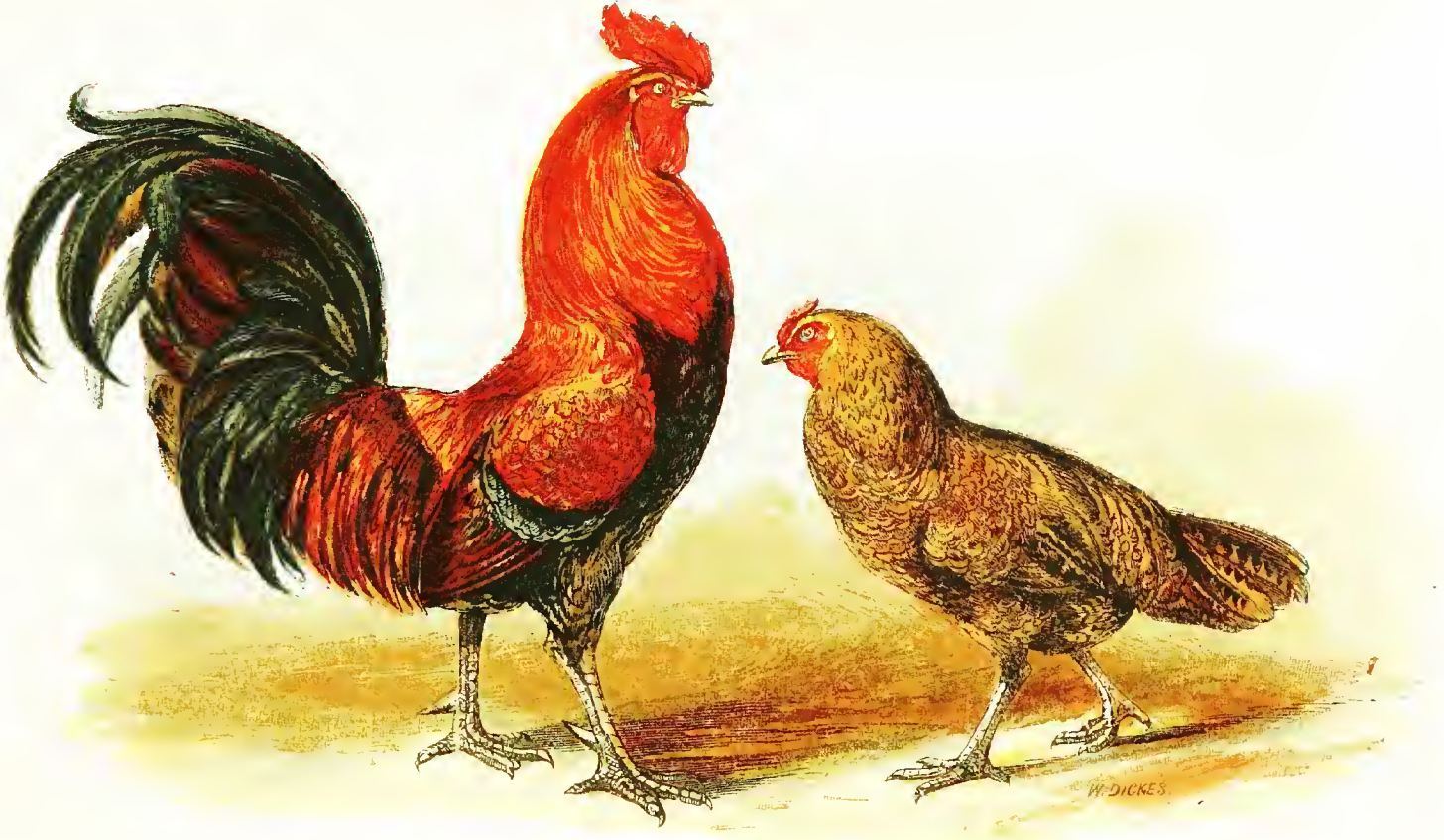
(*Gallus ecaudatus*, Temminck),

Is a species according to Temminck, but only a variety in Latham's classification. Buffon probably had Aldrovandi before him, when he called it the Tail-less or Persian cock according to some authors; for Aldrovandi notices it thus:—"The cock, which they call Persian, and

FRIZZLED FOWL.

which we have figured, differs from our own sorts, mainly in having no tail; in other respects, it is very like them. The cock, however, has a sort of tail; it was all black, sprinkled with yellow lines; the first quill-feathers were white, the rest black; the feet ashy. The hen was like our own in respect of shape and carriage; of ferruginous colour; except the three quill-feathers, which were black." The figure alluded to, has a large double comb stretching backwards. Buffon was led to credit an absurd notion, accounting for the loss of the tail, to the effect that on their being sent from England—in which country they had become naturalized—to Virginia, they lost their tails! And this he states, not only on the authority of Virginian colonists, but from the notice of these fowls in the "Philosophical Transactions" of 1693. Buffon believed them to have originated in the tail-less forms in Virginia; and bases his hypothesis on the circumstance, that they were unknown to the ancients, and that naturalists did not notice them until after the discovery of America. He rather whimsically argues from analogy, that as European dogs, with long ears, lose their bark, and acquire straight ears on being acclimated in the tropics, so the loss of the tail in fowls is a much less remarkable singularity from effects of climate. He refers to dogs without tails also, which, though he first considered them as *monsters*, he found to be a peculiar species, like that of the Rumpkins among fowls. That they are a distinct species, is undoubted; but that they lost their tails from effects of climate, seems an absurdity. Why, either in the case of dogs or fowls, should one particular variety alone be so influenced by change of climate, as to lose so important an appendage; and this in countries where tails may be said to flourish generally? Buffon describes the Rumpkin as having a blue bill and feet; either single or double comb; no top-knot; and plumage of varied colours. This curious and

primitive species, from the island of Ceylon, has no tail-quills or coverts, because the last of the dorsal vertebræ is deficient; there is, therefore, no base for a tail. The feathers of the neck are peculiar, resembling long silky hairs, which hang straight down. There is no certain rule as to the colour of the legs of these fowls. Mr. Nolan says, that the legs of all the specimens which passed through his hands, were white; he describes the ear-lobes as white, and estimates the weight of the cock at six, and of the hen at five pounds; and the height of the cock nineteen inches, and of the hen, seventeen inches. This breeder pronounces the flesh to be white and juicy, the eggs abundant, and the chickens easily reared. In fact, he considers them a superior kind, in spite of their want of caudal ornament.



BLACK BREASTED GAME.

Game Fowls.

(*Gallus phasianus*, Linnæus.)

This noble race has relationship, though now of remote generations, with the Malays and Pheasant Malays; and has therefore, still farther, descended from one of the great Jungle Cocks already noticed, which have given existence to such prodigious multitudes.

Before we had any of this breed, the inhabitants of several portions of the Malay or Malacca peninsula, and various parts of the East, possessed them, and used them chiefly for the purpose of cockfighting.

Mr. Ellis, in his "Polynesian Researches," has supplied very interesting information about cockfighting in Sumatra, of which we shall give a succinct account. With the natives it is rather an absorbing occupation than a sport. No man goes out without a cock under his arm, and sometimes large groups of men may be seen thus accompanied; and even countrymen coming into towns on business, consider it discreditable not to have one with them. Deep gambling is a matter of course with these people, who, having a superstitious confidence in the prowess of their birds from previous successes, will stake their nearest relatives and everything they are worth, on the issue of a combat. A father has been known, when dying, to recommend his son to match a favourite cock for a sum equivalent to his entire property, from the notion that his bird was invincible. They never match birds

of the same colour, but select them of different ones, lest there should be disputes or deceptions. The Malay breed is held in great esteem in Sumatra. The cocks are never trimmed there for the fight, but left in their full plumage. The spur used is of steel, tied to the leg; and a bird of superior height is brought to an equality with his adversary by fixing it at such level as the relative heights of the combatants may require.

Dampier, in his Travels, mentions that a thousand Malays will sometimes assemble at one cockfight. In China, also, this sport is common. Asia, having been first peopled, may be assumed to have been the portion of the earth where Game fowls were first bred and used for the amusement, which has been more or less known in the other quarters of the world. The Game bird of the Malay people has more bulk, and therefore more weight, than the English kind, but is said to be deficient in the activity of frame, and high temperament, which a long course of careful breeding has produced in the latter.

Before giving any description of the English Game fowl, it may not be superfluous to make some attempts at tracing their introduction into this country. For this purpose cockfighting must be a little longer dwelt upon, as practised in ancient times in Europe.

More than five hundred years before the Christian era, it was fashionable among the Greeks. In the city of Pergamus there was an ancient exhibition of cockfighting, which originated from an interesting incident. A celebrated Athenian general, when about to engage the Persians, saw some cocks fighting. From this circumstance he took occasion to animate the courage of his troops, saying words to this effect:—"These fowls fight for victory; one will not yield to the other—and yet they have not motives such as ought to influence you: they have neither country, nor gods, nor

families to fight for." By this happy illustration he so excited the martial spirit of his army, that they fought and conquered. This, then, gave rise to a feeling of gratitude, which he evinced by establishing an annual cockfight festival to the deity who had presented him with the occasion which he had so felicitously turned to the advantage of his country. The scene of this festival was the theatre, where ancient philosophers wished that their pupils should attend the exhibitions, to derive lessons in bravery from the noble examples which the cock's indomitable courage afforded to them.*

We must pass by the classical authorities from which it is known that the Greeks, and the Romans afterwards, emulously obeyed the instructions so given to them. Cockfighting and the breeding of Game fowls became of course customary, and so, what was at first partly religious and partly political, became a popular pastime; and it is believed that the Game birds which both those nations had, were originally from Persia, where the Greek general Themistocles had so remarkably noticed them.

At Alexandria there was, in ancient times, a race of hens famous for producing prime Game cocks. Aldrovandi relates of these cocks, that they fed but once a day, and that the hens would sit again and again, as it was usual to remove their chicks from them as fast as they were hatched, so that one hen would hatch from forty to fifty at one sitting, it may be said. Game hens are, we know, capital sitters and

* Lessons of this kind have not been introduced into our schools or universities; but during the present popularity of fowls, who can say that Exhibitions may not yet be founded, after the venerable sanction of Socrates and Solon, who so highly approved of the sport in question? We venture to predict that no great proportion of the students would be *plucked* from non-attendance at it, even if of more frequent occurrence than at first in classic Greece; and this popularly illustrated Gallus war would possibly be more interesting than Cæsar's Gallic one.

nurses. Indeed fowls the most pugnacious are generally the closest sitters. Game hens are remarkable also for defending their chickens with that bravery which is their natural temperament; and which, in this instance, becomes a useful female virtue.

The Mexicans, and probably long before the arrival of the Spaniards into their country, were also devoted to cockfighting, and the modern inhabitants of Mexico, male and female, even of the highest class, regularly attend the sports of the cockpit.

The first fights we read of in this country were in the reign of Henry II., though the Romans must have brought the sport into this country. We infer from Cæsar's account that the Britons had some notion of it, else why should he have stated that they reared their fowls only for amusement? And we are probably indebted for the true Game breed to the Romans, as it is improbable that they could have been so long in Britain without indulging in so favourite a sport. We are informed by historians, that they sent British mastiffs and bulldogs to Rome, the latter being an indigenous species, and highly celebrated by those writers. It would have been as easy, therefore, for them to have imported into England some of the fighting fowls which they had themselves first obtained from Greece and Persia.* We may conclude that cockfighting became a British pastime wherever the natives had opportunities of seeing and mingling in Roman amusements.

Cockfighting was prohibited in the reigns of some of our monarchs. Henry VIII. and James I. were fond of it. The Protector, Oliver Cromwell, denounced it by law, but

* Buffon considered Persia as the primitive climate of the cock genus generally, cocks being there held in high estimation, particularly by the Dervishes, who consider them as living timepieces. He says of the English cock, by which he designates the Game breed, that it is higher on the legs, and more spirited than the French breed.

Charles II. reopened the Royal Cockpit at Westminster, which Henry VIII. had established there; and mains were fought there even within the present century.

We cannot give the details of the cockpit, though amusing and curious, nor the opinions of the Fancy as to the rules to be observed both in training and fighting. A knowledge of the mysteries of the cockpit would not tend to the improvement of morals and manners. The cruel sport has been wisely prohibited by the law, and we must consider it as a bygone English sport of demoralizing tendency. The breed, however, we willingly retain, not for its pugnacious, but its useful properties and its acknowledged beauty.

A thorough-bred Game cock of high degree never fails in courage when opposed to one of his own order. And the Game fowl is the only bird put to the test of combat to prove whether he be genuine or not. For example, a cock was chosen for a main, to make up the number; and his appearance indicated all that the best judges considered essential as to qualifications; his action and bearing gained their unqualified approval; no flaw nor imperfection was visible; and the acute men who bred Game fowls for the cockpit would not have overlooked or excused any defect, being remarkably practical and observant persons. When this bird had got through half his battle, he dropped his tail and made a sudden retreat. As he was in perfect health, had been the cock of the walk for eighteen months, and carefully bred from a stock possessed by the owner during the five preceding years, it was inferred from this instance of timidity, that, notwithstanding his favourable points, an injudicious cross had occurred previously to this period. The poor coward's neck was therefore wrung, and all his relatives shared his fate.

Sharp practice of this kind very soon discovered, to the breeder of Game fowls, what any bird's progeny was worth;

for if any imperfection were latent, it would soon become manifest by the natural test. And though in the case of other and select sorts of fowls, such as those we have already treated of, none of their future progeny will be brought to the trial by combat, nor liable to have hereditary failings discovered in this manner, the example of those who breed Game fowl should as far as possible be followed by every one who wishes to have prize birds.

Fowls, indeed, of hereditary excellence, but not showy themselves, and of apparent inferiority to their ancestral line, have produced very fine—even prize birds. The latent qualities have been developed in the offspring, which have shown every external excellence. Repeated trials have proved that the characteristics of excellence may be developed in an offspring bred from individuals in which some of the prime qualities of the "strain" may be but partially revealed.

We do not mean to say that birds with small development of some desired point, but which, nevertheless, have been produced from first-class birds, should be preferred, or thought equal to others of more handsome appearance, and which had descended from first-class fowls also; we would merely say that the former should neither be despised nor discarded, provided the excellences required are hereditary, and were possessed by their progenitors.

When cockfighting was in fashion and patronized by the aristocracy, the number of birds reared for the cockfight,—besides those bred merely for their beauty in the poultry-yard, and the excellence of their flesh, and the good qualities of the hens for hatching,—was prodigiously great. The numbers, indeed, wanted as reserves for the battlefield must have been large, when a thousand have been known to fall during a single week at Newcastle.

So many are even the approved varieties, and so difficult the modes of distinguishing the sorts among professed breeds of them, that we are at a loss for a satisfactory classification

of them. It is difficult to be clear and definite respecting those that have a just claim to be enumerated; for the shades of distinction are in some instances so minute as to be hardly worth notice, and yet they have been deemed sufficient to give rise to numerous names.

There is a muster-roll of clans, each claiming a distinctive appellation and honourable position, all however with the like crest—a serrated arch—on which they so pride themselves, that their best wishers and most constant attendants sometimes think it necessary to lower it; and even to trim the jackets of these warriors instead of leaving them in full feather. We might enumerate some tribes by certain titles, which, like the appellations of *Rufus* and *Longshanks*, given to two of our monarchs, would indicate their peculiarities. If, indeed, we were at liberty to borrow from historical titles of this sort, there is no creature—inferior to man—more deserving of being named *Cœur de Lion* than our Game cock.

As the Knowsley strain of black-breasted reds, bred with such care by the late Earl of Derby, is the finest and most select in England, we commence with it.

The dignity of this, the highest blood of Game fowls in point of pedigree and bravery of spirit, has been maintained with such extreme attention, that a register has been kept of all the alliances which it has been permitted to form with the fowls of Lord Sefton, and of other individuals noted for breeds with which it was desirable that crossing should be effected.

The original blood, according to the report of Mr. Thomas Roscoe, who had the superintendence of this precious breed, has been for a very long time at Knowsley. His description is as follows:* "The cock is a fine round-shaped bird with white striped bill; dun eyes and fiery; round and strong

* Dixon.

neck; fine round close-feathered hackle, feather-points to shoulders; short, stiff, broad back, close-feathered and hard; tail long and sickled, well tufted at root; wings round, and well prolonged, so as to protect the thighs; breast broad and black; belly small and tight in the pinions; thighs short and thick, well set to the body; legs long and white; the comb of a stag is rather large and red, before being cut; weight about five pounds.

"The hen is of a fine round shape, in colour resembling a partridge, with daw eyes, white legs, toes, and nails, and large fan tail. The chicks when first hatched inclined to yellow, with a darkish stripe down their back, changing colour as they advance in age." He adds that they are so bold as sometimes to attack men, dogs, calves, pigs, turkeys, and geese. One of this breed has killed in fair fight seven champions in one day at Knowsley.

Many of them are named after their colours alone, viz.:

Dark black-breasted birchin duckwings.

Brown-breasted or ginger.

Silver black-breasted duckwing greys.

Clear mealy greys.

Dark black yellow-breasted greys.

Red duns.

Black duns.

Blue duns.

Smoky duns.

Whites.

Whites marked with red on the shoulders, bearing the *sobriquet* of Piles.

Streaky piles, if streaked with any colour in hackle, breast, or tail.

Dun piles, if any mixture of dun.

Cuckoos; if the white be barred with black and yellow.

DUCKWING.

The following, which are of inferior rank, present their colours too:—

Pheasant-breasted red.
Large spot-breasted red.
Blotch-breasted red.
Turkey-breasted grey.
Large marble-breasted grey.
Large spot-breasted grey.
Shady-breasted and birchin duck.
Streaky-breasted birchin duck.
Marble-breasted birchin duck.
Brassy wings.

The sub-varieties, distinguished for their light-red colour, are those whose breasts are entirely red, or red with black spots, or black with red spots; as the shades predominate, the names are given; as, ginger-breasted, spotted, and streaky-breasted, &c.

There are others, also,—Copper Wings or Wavy Birchens (which are we think the same), and not so distinguished by their colours, as by some uninteresting peculiarities: the Spangles, from their brightness; the Furness, from a place in Lancashire; and the Polecat, from imaginary resemblance to that animal.

Muffs and Tassels bring up the rear, but they have some fair claim to a higher place.

The black-breasted reds have branched into families known by the colour of their legs. The white legs are Lord Derby's breed. The others are yellow legs; olive legs; blue legs; and dark, but happily no black legs. The females, of course, have their pretensions. The bill and legs correspond in colour, almost in all instances. The eyes are accurately noticed, as red, pale yellow, daw-eye, or dark brown. We take the authority of Mr. Sketchley,

who knew a great deal about the matter, for selecting the following eight families as entitled to precedence;—dark reds, dark black-breasted reds, dark black-breasted birchin ducks, dark black-breasted berry birchins, silver black-breasted duckwing greys, clear mealy greys, dark black-breasted greys, and red duns.

Mr. Sketchley has described the black-breasted birchin duck thus: "The feather is a grey hackle, tinged with black above and black beneath, the ground yellow, with a general shade of the dark birchen throughout; and clear black breast, with yellow legs and beak. No cocks continue longer in sound health than those of this kind." The duckwings generally are the most beautiful in plumage; they derive the name from a bar of steel-colour across their larger wing-coverts, like that which crosses the mallard. The breast black, wing-coverts rich brown; the hackles and saddle are white, or, as in our Plate, straw-colour, which is the true game colour; the comb high and full, as are the wattles; the eye bright, the ear-lobe small, legs yellow or cinnamon, but not always so. The plumage of this family is truly magnificent, and in this respect it surpasses every other kind.

The dark black-breasted berry birchin.—We know not what distinction Mr. Sketchley would have made between this and the preceding bird, unless it were that the plumage has a deeper shade, more of the ripe brown berry than of the bark, of the birch-tree.

The black-breasted duckwing greys differ from the other duckwings, in having grey tints in place of yellowish or cream-coloured. "Their iridescent wing-coverts remind one of the speculum in a duck's wing, are most harmoniously coloured, softly yet brilliantly tinted, and only not sufficiently rare to be admired with enthusiasm."*

* Dixon.

Clear mealy greys, and dark-breasted greys, are sufficiently designated by their names.

Red duns.—The cock is red, with red dun breast, flight-feathers, and tail.

We have inserted the Blue duns in the list. Why should they not have place there, as well as the red, black, and smoky duns?

We have ventured to insert them in this muster-roll of celebrated Game fowls; though Mr. Dixon, who has honoured them with a distinct chapter—of course an agreeable one—hesitated a little as to the admission of their right to such enrolment. But one of his correspondents described a family of Blue duns long known in Yorkshire and Lancashire as "the most courageous and impetuous of the Game fowls, seldom having been known to lose their first battle." The same individual describes the plumage of the cock as singularly beautiful; "the breast of rich dark slate-colour; the feathers having a broad margin of a darker hue; the saddle of a deep blood-colour, and the hackles of the neck and tail of a dark red, gradually shading to a beautiful golden tint; the tail black and flowing, with a brilliant green shade. The hen is marked in the same manner, all over the back and body, with the hackle of the same golden colour."

Another correspondent of the same author attributes to the Blue duns these well-known qualities of the Game breed: familiarity, impudence, and pugnacity—and as having the shape and disposition of that race, and "being nearly equal to game of any sort for eating." Pretty strong evidences on the part of the Blue duns, for establishing their claims to consanguinity with the avowedly legitimate Game family.

The deeply initiated will know whether the following description of a cockerel of the same sort of duns is critically that of the Game Blue duns, which is spoken of

by other writers; for it is most difficult to determine which is the real Simon Pure, there are so many Blue duns perplexing us. But here are the marks and tokens of the cockerel: comb, large, single, deeply serrated; bill, dark horn-colour, white at the point of both mandibles; ear-lobe, whitish; wattles, large and pendent; iris, orange-brown; neck-hackle, yellowish grey; back-hackle, the same, intermixed with black; legs, light lead-colour; general tint, bluish dun; claws, greyish white.

The physical processes which have produced Blue duns in other species of fowls, as in the Spanish, Polands, and Hamburgs, by the reversion of colours to some remote typical shades in the ancestors, are interesting to the naturalist; but too philosophic either for ourselves, or the general readers of poultry books.

There is another variety, not in the preceding catalogue, known as the Hen cock, from the resemblance of their short feathers to those of the hen: they are brown or speckled. This feminine appearance was sometimes in their favour at the cockpit. Cocks of another breed, when matched with them, were deceived at first, by supposing them to be of the tender sex; but the first blow from them dispelled the delusion from the gallant bird who at first had refused to strike. The first blow is half the battle; and often that which, in cock-fighting, decides the contest:

> Who first attacks the foeman's life,
> That party conquers in the strife.

Besides the varieties mentioned above, there have been birds brought forward as if from India. "At some recent exhibitions, very handsome birds have been shown as Indian Game fowls; and their brilliant white plumage, fulfilling all our required conditions, has attracted general attention to the class so denominated; but on instituting inquiries as to their

introduction, doubts previously existing in our minds, were strongly confirmed. The real Indian bird is a heavy, lumpy fowl, whose coarse head, thick neck, low leg, and general bad figure, would at once distinguish it from our English breed; and thus the fowls in question appeared so much at variance on these points, with those imported birds that were known to us, and the stock thrown by them when crossed with our own fowls, that relationship seemed hardly possible; we inferred, therefore, that these white birds were incorrectly called Indian. A friend, in whose judgment we place great reliance, strongly confirms this opinion. 'The Indian fowl is just as you mention; indeed I think he may be described as decidedly ugly, and although game, he dares not show the courage of our own; and certainly the admirers of this breed have no right to assign all white Game fowl to an Indian origin.'"*

With respect to the Whites generally: they are, when of a uniform colour, very beautiful, but apt to break into piles of various shades; nor are they, as the phrase "showing the white feather" might intimate, in any degree deficient in courage; but red, or some other colour, is apt to appear in the hackles, breast, or tail; and then they become piles according to the colours produced.

The natives of India do not trim their birds for the fight, nor think those that exceed four pounds ten ounces—which was the standard weight of a fighting cock in England—disqualified for the combat, or, in professional phraseology, from "fighting within the articles"—of war.

A gentleman of high military rank, long resident in India, has a drawing in this country, executed in a very spirited style by an Hindoo artist of Calcutta, representing two rajahs, with their respective cocks in mortal combat. The birds therein depicted, are very inferior in appearance to

* "The Poultry Book," by the Rev. W. Wingfield and G. W. Johnson, Esq.

ours; but the chiefs had staked—and this is a fact—a lac of rupees (£10,000) upon the issue.

A story is pleasantly related, which, if true, as it probably is, shows that the Indian Game cock is very inferior in courage and vigour to the British. An European obtained a cock of a common breed and challenged a rajah to match it with one of his; the latter smiled at the challenge, but accepted it. The plebeian bird, to his astonishment, beat its aristocratic antagonist. The conqueror was ultimately sold for a great sum of money.

The treatment and discipline of Game birds is different from that of ordinary fowls; and though they are now kept for the ordinary purposes, it may not be amiss to give a brief sketch of the peculiar rearing which used to be observed respecting them when the cockpit amusements were allowable, (and which to some extent are, it may be still followed,) if it were only to maintain the high character of this remarkable race.

Indeed their admirers say, that they are to be preferred to all other fowls, for the goodness of their flesh and their hardihood, independently of beauty. When we have inquired whether they do not give much trouble by their quarrelsome propensities, and require a strong day-police in the poultry-yard, by reason of their fighting together without any apparent cause, we are assured they are as peaceable as other fowls. Mr. Dixon good-naturedly takes their part, and says that though the Game cock will not submit to intrusion or insult, he will not go out of his way to quarrel, and is far from being an aggressive sanguinary tyrant! He thinks that other poultry, which may happen to be killed by him, have themselves to blame for some impudence and aggression on their parts. We believe, however, that it is enough to say of him, that he is quiet when not vexed, which is but negative praise after all, and such as we may safely

award to very troublesome characters even of the human kind.

Mr. Dixon illustrates his defence of the Game fowls, in respect of fighting, by allusion to the sportive combats of puppies and kittens, which growl, snap, grapple, and scratch in perfect good humour. The sparring of pullets, and of cockerels, he thus considers to be mere play. Now, though we often see what certainly is in some measure the exuberance of animal spirits thus discharged, there is reason for thinking, that there is much really bad temper displayed by the Game breed particularly; and that the quarrelsome pullet often becomes a vixen hen; while the cockerel fond of sparring in his youth, would make fighting his occupation and delight in after-days. Indeed, we suspect that this apparently playful disposition is in reality a pugnacious one, like that imputed to the Irish peasant, who first treats his friend, then "for love knocks him down."

This fighting and persecution is thought to be caused sometimes by the altered appearance which fowls present to each other when their feathers are dirtied and draggled from showers, or dirt adhering to them, and discolouring the plumage, and so disguising them that the nearest relatives and companions do not recognise each other in such condition; each considering the other as a stranger, they rush accordingly against the unknown one. We must allow the possibility of such mistakes of person as an apology for what otherwise would be supposed to proceed altogether from the temperament of this hot-blooded race, from our own experience with regard to the quiet and peaceable Shanghaes. Some young hens and a cock were living in great harmony; one of the hens, in search of insects in the sediment of a nearly dry pond, fell in, and dirtied her feathers, so as to be in complete masquerade. The first of her assailants was the cock, previously her devoted mate, and for days she was obliged to

hide from the persecutions of the whole set, until her disfigurement had passed away. At the time, we supposed that the feathers of the hen might have exhaled bad odours from the foul pond, and offended the sensibilities of her companions. But upon inquiry, and consideration as to the causes of such a sudden outbreak of hostility as that just related, we think it might have proceeded from the cause first suggested. A very simple punishment has been resorted to for bringing into subordination young Game cocks, so that the mastery may be left to some senior, who is expected to preserve order by the awe which his presence, prowess, and experience are calculated to inspire. The punishment consists in holding any naughty quarrelsome young bird in one hand, and allowing any other bird he might have attacked to peck at him, and punish his head until he cries out; or, what is more of a lady-like discipline, to slap him with a glove or handkerchief until he becomes subdued, respectful to his superiors, and peaceable to his equals.

Some assaults consist in pecking at the skin of the skull to a violent and perhaps fatal degree. This is only going a little farther, and more seriously, than the Spanish birds, which have a strange similar propensity to peck at each other, but harmlessly.

In the Game breed, the cockerel becomes a stag when one year old, and is not called a cock until he is two years old. His comb used to be clipped, or dubbed, at the discretion of the operator, when he began to crow, or from the age of five to nine months. This "dubbing" was not to confer the honours of knighthood, but to give him a sharp, knowing, game look. The cutting of the comb has been as much a matter of style and fashion as the trimming of the human head; cock-barbers sometimes cutting high, and sometimes low: the fleshy caruncles behind the ears, and the wattles were also clipped. And indeed all this was necessary, and of

course continues to be so wherever such pugnacious birds are kept, lest those tender parts should be injured in the conflicts of the poultry-yard, and inconvenience the bird encumbered with such superfluous excrescences from seeing clearly where to deal his blows, or how to escape from the assaults of his antagonist.

The majority of Game cockerels are now destined to the spit, when fatted for it in separate compartments of a coop. It is a sad death for them to die, comparatively with the glorious exits made from the stage of life, with which their ancestors were honoured, when they, in this, unlike the knights of olden chivalry, received their spurs before they won them, in anticipation of the gallantry and prowess with which they were so sure to use them.

The feeding of Game cocks was of a particular kind: hard food, alternating with physic and a regimen calculated to put them into the best condition, without being too fat or heavy. Their bread was called cock-bread, and made of flour, eggs, and yeast, in certain proportions, with some spicy condiment. Barley, and toasted bread steeped in water, at other times was given to them, with a little meat chopped small.

The Bantams.

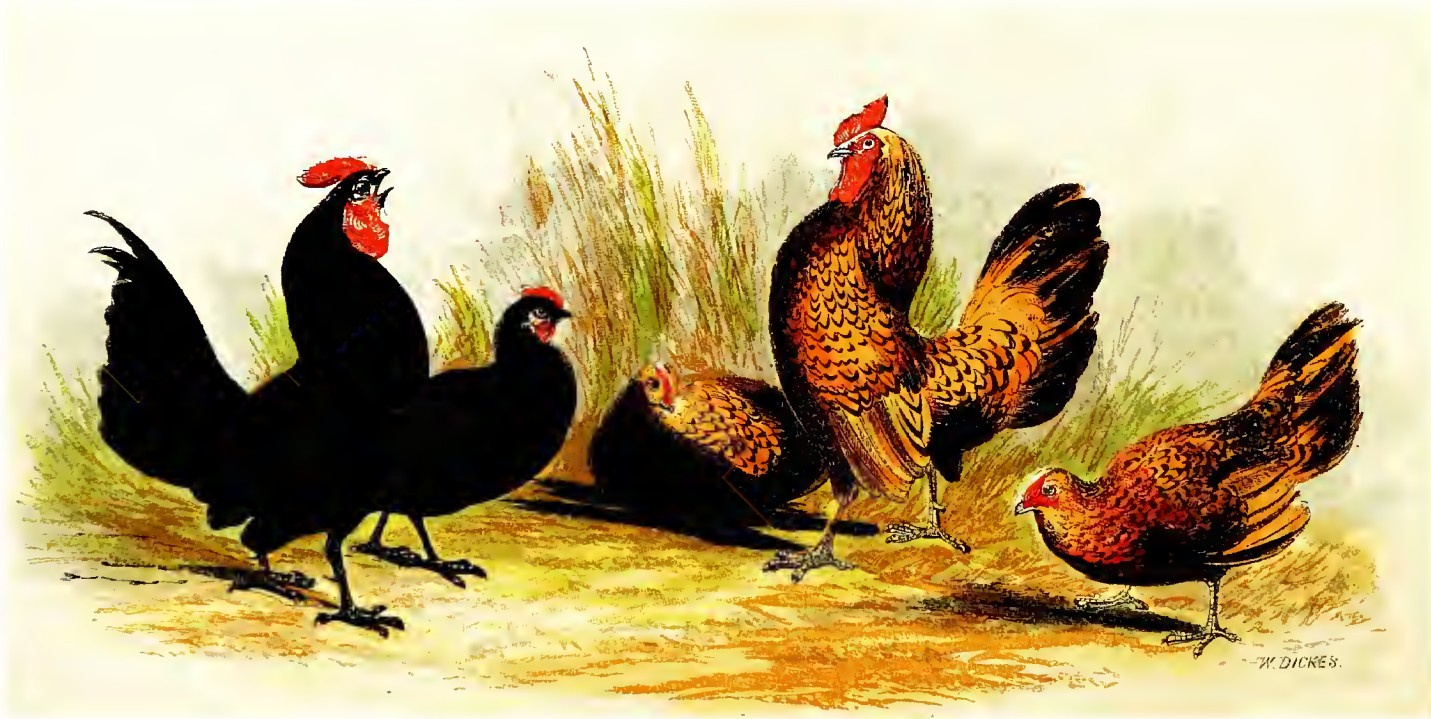
(*Gallus Bankiva; Le Coq de Bantam.*)

Mr. Dixon very humorously attributes the passionate temper of the Bantams, to the superabundance of pepper which they pick up in their native island of Java; their arrogance and assumption, to the use of a certain herb called *bang*; and their propensity to make every rival turn tail, to the court etiquette, which obliged all her subjects to turn their backs upon their sovereigns, whenever they passed by.

The Bantam species has much resemblance to the Javan cock (*Gallus Bankiva*), but the position of the tail differs, being horizontal and vaulted in the latter, while in the former it is more upright, and forms two vertical planes. The feathers which fall from the neck over the top of the back, are long in the cock, and with divided barbs; the end of each feather widening a little and becoming rounded.*

Buffon describes the Bantam as bearing a strong resemblance to the *coq pattu* of France, having the feet covered with feathers on the outside; forming a sort of boot to the very claws. He notices its fiery eye, and distinguishes between two sorts of the Bantam—but both English—a large booted sort, and the dwarf, which is of gold plumage, and has a double comb. He seems to have known different sorts, including the very diminutive creature not larger than a pigeon, with white and golden plumage.

* Cuvier.



BLACK BANTAMS.

GOLDEN SPANGLED BANTAMS.

Temminck considers that the Turkish cock, which is allied to the Bantam, belongs likewise to the Bankiva species; and this naturalist considers the Bantam and Turkish together, by reason of the strong analogy between themselves, and with the Bankiva. They resemble each other in smallness of size, in the form of the tail, and may, according to our present authority,* be considered, perhaps, as the result of a breed, less crossed, more directly proceeding from the Gallus Bankiva. The chief difference is found in the feathering (more or less long) with which the tarsus and toes are covered; and this difference is not a specific difference, but the effect of domestication. The races whose tarsi and toes are so heavily feathered, owe, according to our naturalists, this peculiarity to superabundance of nutriment, which produces those feathers on their lower extremities, as in the instance of the crested fowls, it produces tufts on the head.

On the assumption (which there is no reason to doubt) that the Gallus Bankiva is the remote parent of the Bantam and the Turkish, and that we are rightly informed that the races most approaching the primitive species have experienced the fewest alterations from domestication, we are rather puzzled to account for the great changes that have taken place in the little Bantams, and their congeners the Turks. We are not distinctly informed of any peculiar species having feathered legs, with which they have formed inter-alliances. The fact, however, that the hirsute covering has been banished in many instances by crossings, and perhaps reversions towards the clean-limbed progenitors, in some measure satisfies our perplexities—while we feel how true it is that there are many things which we dream not of in our philosophy. Inter-alliances repeated continually, and with distinct and foreign species, will effect very curious

* The Editors of the new edition of Cuvier.

physical changes in the animal economy; and Dr. Gwynne appears to have settled the case of the genealogy of the diminutive Bantams. His notion is, that, derived from some of the full-sized breeds, they have degenerated from causes adverse to their attainment of large growth, and have become a distinct species, especially distinguished by their small size. He reasons from analogous degeneracy, in other instances, not confined to poultry, but extending even to mankind, as in the extremes of the Patagonians of South America, and the Bosjesmans of South Africa. And he points to the fact that care is taken to keep down the size of the Bantams to the admired standard by various means.

It is curious that in the case of the Bantams, the usual course of improving the race of domesticated animals, including poultry, and all creatures intended for human food, or human use in any way, by increasing the bulk, is scrupulously counteracted. That the Bantams may have the least possible chance of much growth, they are hatched by fanciers in September, an anti-utilitarian practice, which, if pursued with other kinds, would carry its own condemnation with it.

Whatever may have been the original causes, whether peculiarity of climate, or stinted supplies of food, that may have restricted or reduced their size to their present small scale, as regards the Brobdignags of Shanghae or Java, these fowls are the smallest, and for this very reason, independently of fine plumage and symmetrical form, are the prettiest of poultry pets. The influences that have caused their present form must have been considerable, if indeed they were not *created* pretty much as we see them. Who can prove that they were not?

An engraving before us—which is no doubt perfectly correct, from the high character of the work in which it appears—of the *Gallus Bankiva*, the reputed original of the Bantam

tribe, is a tall, slim, wicked-looking bird, with very fine drooping sickle-feathers, and not like the little coxcombical, impudent, and vain puppy who holds up his head, and struts in his gait, and carries his inwardly-curved tail so high that we might expect to see him elevated from the ground, which he almost disdains to tread, and blown away by a blast of wind.

And yet one or two varieties of Bantams at least,—the black-breasted and the Game,—have much resemblance to the aforesaid jungle-fowl.

The varieties to be noticed are :—

The yellow or Nankin Bantam.
The Game Bantam.
The gold-laced Sebright.
The silver-laced Sebright.
The Spangled.
The Black.
The White.
The Silk.
The Partridge.
The Jumper or Creeper.

The Yellow, or Nankin.—This latter name is inappropriate: for Nankin is not assumed to be the original locality of any of these fowls, as far as we can learn; and the ginger-yellow colour of the cotton manufactured in China or India, corrupted into *Nankeen*, is a very unmeaning designation. Yet our Anglo-Indians have applied it. Let us call them yellow Bantams, and proceed to describe them.

The cock has variegated and very showy plumage, in which orange and scarlet, with deep chestnut on the back and wings, are apparent; the tail-feathers black; hackles slightly purplish; breast black, with some of the feathers edged with white; comb either double or single,—a few

prefer the latter, but neither disqualifies these fowls for competition as show birds.

The hen:—plumage principally ginger-yellow; hackles dark; comb small; legs of a lead-blue.

There is a sub-variety known as—

The Game Bantam.—This has more brown than the former, but much resembles some branches of the real Game bird in form and colours, although on a very reduced scale of proportion. This similarity, in some instances, has been so strong, as to have led to the notion that our variety is a mongrel—by successive descents—between a small sort of the Game breed and the dark-breasted red Bantam; but this does not appear well founded. The artist has portrayed this Game-coloured breed, which here shows, from a living model,—a breast of dark-coloured and red hackles, with the characteristic upright tail, and with sickle-feathers, which, as we have noticed, do not ornament the plumage of the high-bred Bantams.

This variety has the good qualities of the Game breed for hatching the eggs of partridges and pheasants, and bringing up the delicate broods of birds which cannot be domesticated sufficiently to incubate in the poultry-yard.

The caprice which has pronounced the hairy covering (and the more excessive the more prized) along the thighs, legs, and toes, of the Cochin China family to be worthy of admiration, has condemned a similar distinction in some Bantams. This is an inconsistency. The hirsute covering which was natural to the Bantams, even to the tips of the claws, but which certainly contributes to render these conceited things ridiculously consequential, has been got rid of, in many instances, by repeated crossings through a long course of years. The object of the fancy now is to produce birds that are not "booted," merely because it is very difficult to get rid of what nature has given, and what art tries to subdue: fashion

calls for the clean-legged ones, instead of those that were feathered with long hairs brushing the very ground as they moved along, when they were imported here two centuries ago.

There are reasons for discouraging the growth of "fluff:" it has been found inconvenient to hens getting in and out of their nests, deranging, by entanglement, the straw and eggs, and when wet, the hairs, which are sometimes three inches long, annoyed the young chickens exceedingly, just as the spurs of a field officer or dragoon would be troublesome among the muslin trains of ladies in a ball-room.

The *speckled* feather-legged Bantams are almost as rarely seen now as a mocassined Red Indian in the civilized parts of America, or as a gentleman of the old school in Hessian boots (occasionally indeed a *rara avis* of this sort, vain of his handsome legs, may be seen in the streets of London, exhibiting himself in this guise for admiration); but this is an exceptive case in dress and taste. And so it is with what we may term the antique boot-hose of our little fowls. Yet this appendage of the Bantams had its use in preventing these nice little creatures from scratching, and so rendering them harmless pets in a garden.

That they might be usefully employed in destroying grubs and insects, particularly wood-lice, even in the best-kept gardens, is a fact established by a practical and professional correspondent of the "Gardener's Chronicle."* He states that wood-lice may be killed by employing Bantams. He experimented with these little labourers thus:—Having caught a hundred wood-lice, they were presented to three Bantams, which devoured them in about two minutes. Seeing how serviceable they were likely to be in this way, he had them in attendance when turning a compost; and neither wood-louse nor any insect escaped from their active beaks. In gardens, it may be concluded, they would save various crops which

* December 1st, 1849.

might otherwise be injured. The clean-legged Bantams would however do mischief by scratching.

The Gold-laced Sebright.—This is the most prized sort, brought to such perfection of miniature beauty by that enthusiastic breeder of them, the late Sir John Sebright, M.P. for Herts, who is said to have obtained the first specimens from India, and exercised every device by which he thought it likely to attain some desired point. Distance was nothing to him in pursuit of a bird by which some experimental cross could be effected to produce any proposed excellence.

One of his objects was to have the largest, smallest, and best varieties of the gold and silver kinds, and after long and patient experiment, and much secret and mysterious proceedings, he succeeded.

The progressive alterations effected by the perseverance of Sir John Sebright were of the following nature: the Polish breed was crossed with the Bantam, between forty and fifty years ago, and the first result was a spangled plumage, and subsequent crosses produced in the beautiful feathers the black edge, which is so much admired. But this gain in feather was attended with the disadvantage of increase of size, from the greater bodily proportions of the Polish breed; and generations of birds passed away before this tendency to increase the size could be restrained. The addition of the tuft was regarded with dismay, when it first appeared, and years were occupied in other crossings, before this appendage disappeared from the new race. But this was not all: the hackle-feathers were to be removed also; and this was brought about by inter-alliance with the Chester cock.

"None but those who understand the process can imagine (says Mr. Baily) the difficulties of producing the Sebright Bantams; they were the result of years, and can only now be kept up by frequent changes of blood; if this be neglected, and the same stock is bred year after year, the lacings first

disappear, next the colours come in patches, at last you get single combs, sickle-feathers, and ugly yellow and black birds."

The cock of the particular variety above named is arrayed in plumage of golden brownish-yellow, every feather having, all the length, a narrow border of black; the quill and principal tail-feathers having the extremities tipped with black; double comb, and the wings drooping almost to the ground, but like a gentleman's cloak (we except a lady's), not altogether sweeping it. The tail without sickle-feathers, and folding considerably, is carried well over the back. There are neither saddle nor hackle feathers. The feet blue and free from feathering.

With respect to the colour of the small ear-lobe, Mr. Hewitt has thus expressed his judgment:—"In the Sebright laced Bantams, I have yet to see a specimen in which the ear-lobe is perfectly white; all that I have yet had were *blushed*, and many were perfectly red in the ear-lobe. I should prefer the white, but it is not to be generally, if ever, obtained. I have also invariably noticed, that any unusual whiteness of the ear-lobe is accompanied by a sad falling-off in the lacing, and therefore, if attainable only at so great a cost, it must not be insisted on. Whether the ear-lobe is white, or possesses the blue tinge, either form would place the bird above those of its competitors, who, equal in other points, manifested the decided red stain, which, it must be remembered, is widely removed from the 'blushed' appearance above alluded to." The gold-laced hen corresponds exactly with the cock in plumage and other particulars, excepting weight, in which she should be two or three ounces lighter.

No class of Bantam is more vain and impudent than this laced Bantam. Both sexes—but more especially the male—seem conscious of their really captivating appearance, and as if they prided themselves on weighing but fifteen or sixteen ounces, and would not eat of anything that might be found

to give grossness to their tiny and graceful forms, of which the breast protrudes in a truly impudent manner.

Silver-laced Bantams.—These differ from the foregoing kind, only in having a white silvery, instead of golden ground plumage: the more nearly that the ground shade—which is usually of a cream-colour, and sometimes very yellowish—approaches to the pure white, the more prized and beautiful is the specimen. That these prized beauties are not easily reared, is one of the circumstances which endear them to the possessor. Out of forty-five eggs of this variety, Mr. Baily considered himself fortunate in obtaining eleven chickens: an illustration of the fact that birds of very high degree are not so fertile as those of the humbler classes.

The chicks of the Bantams generally should be hatched in fine weather, and kept for some time in a cozy place.

The Silver Bantams make greater efforts, it is said, than their Golden congeners, to attain something of size; and therefore the restraining power of art to subdue this tendency in them, is more requisite than with the others. Of these, very dwarfish and ill-proportioned creatures have been brought into life, as if to mock and reproach the bungling hand of man, who tries to mar the Creator's work. We have read of a Gold-laced Sebright, in size between a fieldfare and a pigeon, with a head and comb large out of all due proportion, and seen it acknowledged that no efforts have succeeded with an individual experimenter in rearing perfectly-formed specimens of the varieties we are treating of, that weighed less than one pound avoirdupois for the cocks, and an apothecary's pound for the hen.

The Spangled Bantams, which have probably resulted from crossings with the Silver-laced and other sorts, are only estimable when the spangles are clearly and distinctly marked, especially on the breast of the male bird. They hardly deserve a distinct notice, as the other sorts have altogether

superseded them in the essential points of beauty. This has been a matter of regret to some of the old-fashioned fanciers, who love the speckled feather-legged Bantams, if it were only for "auld lang syne." They have admirers who assert that their ancient pedigree and high caste entitle them to be respected and raised from their present comparative state of neglect.

The Black Bantam.—The cock has a black glossy plumage, with purplish, rather than the greenish mineral lustre which the Spanish reflects; tail arched and flowing, and showing sickle-feathers; double crimson comb and wattles; legs dark lead-colour, free from hair, to render him fashionable, though he often sports the well-furred* leg and foot. One who seems to have studied his physiognomy and deportment, discovered that he has "a waggish impudent eye:" the self-satisfied air is common to all of the name and race.

The hen has less lustrous plumage, and is free from the impudence of her mate; she has smaller comb and wattles. The writer above referred to, considers her as "less knowing"—of inferior ability to her mate—and therefore, we may humbly conclude, unlikely to henpeck him, as might be the case if she were of the "intellectuals." They are reported to be domestic and quiet, good layers, good sitters, but not very careful mothers; their eggs are long, oval, and tinged with buff; of these they will lay—as do most of the varieties—great numbers in the course of the year, a circumstance highly in favour of the breed generally, in confined situations, where larger fowls would suffer from want of space and free range. Their size is so diminutive, that they have been compared, when first born, to the queen of the black humble-bees, and as having legs apparently more designed for an insect than for a chicken.

These Blacks are very courageous; will fight desperately for

* This furring is in no case on the inner side of the thigh or leg.

an insect or a grain of corn, even with birds much heavier, and thus they show some affinity to the Game breed. The following short anecdote is characteristic of their pugnacity:—"There were two cockerels in this brood; they were little things,* beautifully shaped, but ridiculously diminutive. These two little imps spent the greater part of their time in fighting, which only made us laugh, judging serious injury impossible; but shortly observing one unusually triumphant (for it had always been a sort of drawn game between them), and the other walking about in an odd and uncertain manner, though firm and fearless, I found that this latter had both its eyes closed, from wounds received the day before. I carried it to my dressing-room, to relieve it by sponging, and set it on the stair-cloth while I went to fetch some warm water. Still blind, it began crowing vivaciously; in a few minutes its eyes were unsealed and it was returned to the yard; but battle after battle was immediately fought, and we were obliged to eat one of the combatants to prevent the mutilation of both."†

The *White Bantam* is as pretty and interesting as the fantail pigeon. We think it was one of this variety which we noticed at Her Majesty's aviary, as of a silvery plumage: a little creature which had laid three eggs, two of which were hatched and reared by a pigeon. But generally the white is dingy, and therefore objectionable, with strict regard to neat and tidy appearance in foul weather. In form and symmetry this variety is the same as the black.

It is no easy matter to breed specimens possessed of these qualities—"Plumage perfectly white throughout, without a

* May we not apply these not very legitimately rhythmical lines to them?—

"The god of love's a little wight,
And beautiful as thought,
And thou art little, nice, and light,
And everything,—in short."

† Dixon.

DUTCH BANTAMS. SILK BANTAMS. WHITE OR PTAMIGAN BANTAMS.

single stain; bill, legs, and feet the same; the white ear-lobe well developed; a low rose-comb, with wattles of bright scarlet; a pink face and full sickle-tail in the cock."* We have seen some white specimens with pink legs, pink bills, and very clean legs: these were capital layers and sitters. The pugnacity natural to the Blacks, does not affect the Whites, which are, on the contrary, of mild character. Yet, though their colour is emblematical of peace, some strange rumours have been circulated, which, if true, would show that the blood-red flag is their appropriate banner.

Beautiful specimens of these were exhibited at the last Metropolitan Show, with "fluff" in abundance. The fine engraving of them in the *Illustrated News*, gives them some resemblance to young ladies in Bloomer trousers, bordered about the ankles on the outer sides with white lace.

Silk Bantam.—This variety is very beautiful; as in the instances of some other sorts of Silk fowls noticed. The beautiful group presented in these pages is possibly of the kind properly called the Nankin Silky. Her Majesty, if we recollect right, has beautiful specimens of these Bantams—which are only exceeded in delicacy and loveliness of plumage by the Lace-pigeon, which is certainly in the Windsor Aviary.

The Partridge Bantams.—When chicks, these have such resemblance to young partridges, that it is not surprising that the name which they bear should have been given them as distinctive. They were employed, too, for hatching and nursing partridges. They resemble—to compare little things with large—the Golden Hamburghs, in the shape of the rose-comb, at the back part, the blue legs and shading of feathers—"they are Hamburghs among the Bantams; just as many birds of one continent are found represented in another by corresponding though quite distinct species of the same genus."†

* "The Poultry-Book." † Dixon.

The points of some prize specimens * are thus given in a recent publication :—

"The cock, rose-combed; yellowish-brown hackles; saddle-feathers slightly streaked with black; tail sickled, and of a rich black; back and wing-coverts partridge-coloured; primary feathers bay, but dusky at their extremities; under parts of the body dark drab.

"The hens had a bright yellow hackle, touched with black; breast and under part of the body drab; the rest partridge-colour."

The *Turkish Cock* (*Coq de Turquie*, Buffon) is considered one of the varieties of the Bantam, by Temminck and other writers. Buffon simply observes, "that it is only remarkable for its beautiful plumage." Aldrovandi describes the Turkish Cock as having the whole body whitish, except the wing feathers and belly, which are black; the tail black, tinged with iridescent green, some of the feathers being green on one side, and black on the other; the body with golden and silvery streaks; the legs and feet bluish. The hen white, spotted in part with black; wattles smaller than those of the cock, but in other respects resembling his, except that her neck is yellowish, and her tail of uniform colour.

Another specimen is described by him as spotted with black and white.

Sir W. Jardine describes a Turkish fowl at length; but the description of the tail corresponds to that of our Bantams. The brown feathers, margined with gold, and having edgings of black, are sufficiently corresponding with the Sebrights to stamp them as of the numerous Bantam family.

The *Fowls of Cambodje*, described by Buffon, and called in English, *Creepers*, from their peculiar movement, are, or were, a variety of Bantams. This naturalist's description of them is as follows :—"Their legs so short that their wings

* Exhibited by R. C. Sayers, Esq.

trail on the ground. They are very like the dwarf fowl of Britany, which perhaps is reared there on account of its fecundity. It has always a jumping gait; in general form these fowls are in body about the size of ordinary fowls, and are only dwarfish in the legs, which are very short."

We have literally translated Buffon here. He says neither more nor less about them than what we have stated. Their jumping is their chief peculiarity. Buffon particularizes, subsequently, the Bantam, with feet and legs feathered, and with the feathers so long as to form a sort of boot, which falls below the claws. This bird he describes as remarkably combative and bold, even against fowls which are much more than his match in size. He also distinguishes the dwarf English sort, of golden plumage and with double comb. And again, a pigmy race, not larger than a pigeon, with plumage golden or white (silvery). Aldrovandi has given a description of the hen of this dwarf breed, as all black, except the flight-feathers, which are white at the ends, with white crescent-shaped spots on the neck, and a yellow rim round the eye; the head crested; comb small and dark-coloured; feet yellowish; claws of equal length, and very white.

Can that be a true Bantam which Mandello describes, and which Buffon identifies with the *demi-poule* of India,—or Java Fowl—described by Willughby as having a tail very like that of a Turkey?—a race having at least the family disposition for fighting to the last gasp.

Aldrovandi's description of the Bantam cock, is as follows: —Neck and back chestnut; wings at first black with whitish spots, which afterwards become black; the flight-feather white on the outside, black underneath; the throat, breast, belly, thighs, and legs, black, with whitish spots; feet yellow; comb double, and not very large; bill yellow; wattles large; tail-feathers partly white and partly black. The hen is of a yellowish colour, and everywhere, except on the neck

marked with oblong black spots. One of the "fancy," in Buffon's day, had seen in Paris the sort described by Willughby, and found that it had neither *comb* nor *cravat;* that the head was smooth as the pheasant's, the tail long and pointed; the length of leg considerable (something of the Game sort it would seem), the feathers of unequal length, and their colour generally brown, like that of the vulture.

Mr. Nolan notices the Barbary fowl as a large grotesque creature, like the booted Bantam. He received some specimens of this sort across the Mediterranean through Spain. They are large in body, and fertile, and though really unlike the Shanghaes, have been passed off in some instances as such. Their colour is dark, and their boots render them objectionable as mothers, for the reasons already noticed. We know not to what family these African nondescripts properly belong; yet they seem to be worth claiming, though the Bantams in their excessive conceit may think proper to disown them.

That the Bantams are fashionable, is proved by the Metropolitan Show in January, 1854, containing eighty pens of this species.

The Hamburghs, and their sub-varieties.

The claimants to notice of this family, which, though not so illustrious, perhaps, as some others, is ancient and honourable, are so numerous, not only in the direct line, but in the collateral branches, that we approach the delicate duty of arranging "the order of their going" with diffidence and difficulty. Some of their cards presented to us bear names, indeed, not as old as the time of the Conquest, nor of very classical sound—the Mooneys we may particularize as an instance, but very respectable, no doubt. As to this branch, we first thought they were of Milesian origin, but as they owe their name to the moon-like form of their spangles, we may connect them with a higher and nobler source.

In fact, who can say that they have not as much right to claim near relationship to the Moon as the emperor of China has, whose consanguinity with that planet is universally acknowledged in his Celestial empire?

There are Creoles, too, whose alliance with the Hamburgh is admitted, because, it has been said, they are a combination of Whites and Blacks. This, with respect to the human kind, is an error, as Creoles are properly the descendants of European parents (originally Spanish), who first settled in Mexico and the West Indies. This is perfectly understood in Jamaica, where the various shades of human colour are as accurately defined as they now are among our poultry tribes. For example,—

The Mulatto is a cross between White and Black.
„ Quadroon „ „ White and Mulatto.
„ Muster „ „ White and Quadroon.
„ Mustifine „ „ White and Muster.
„ Sambo „ „ Mulatto and Black.
„ Mango „ „ Sambo and Black.

The Hamburgh Creoles are also called Corals, and Creels, neither of which names explains the characteristics of their tribe. Their combs are not singularly of coral hue, and, therefore, they cannot properly have derived the title from any justly assumed over-brilliancy in this respect. Mr. Nolan's appellation of Creel must either have arisen as a corruption of Coral, or from a supposed fact, that these fowls made their first *entrée* into an Irish market, in the sort of *Kish*, or *Creel*, in which poultry and sucking-pigs are carried thither.

But the patronymic of Hamburgh perplexes us not a little. This should be considered and dismissed in the first place. These fowls have not originated in Hamburgh, but it is conjectured that the merchants of that port of great trade with the East, had imported and carried them there from Turkey, or some other Eastern country, and that commercial traders have brought them from time to time to our shores. This would be a precisely analogous case to the application of the name of Hamburgh to a particular sort of grapes, which had been taken there from Spain, aud sold under the name of Hamburgh.

The Hamburghs were known and reared in England in the fourteenth century, if Chaucer's description in "The Nonne's Preeste's Tale" be any authority.

We had better look now to the parent stock, and the offsets from it; and, to avoid confusion in a very complicated matter, adopt the arrangement and classification of all those which are known under the denomination of Hamburghs, as suggested by Mr. Dixon, and approved by such competent judgment as that of Mr. James Bissell of Birmingham.

Mr. Dixon forms two general classes, viz.—

1. Pencilled fowls, distinguished by light hackles.
2. Spangled ditto, with darker hackles.

In the first general class are all those pencilled fowls which have pure white hackles, or clear unmixed yellow hackles.

Those of pure white hackles, are—

Chittaprats.
Bolton Greys.
Pencilled Dutch.
Silver Hamburghs.
Creole, or Coral.

Those of unmixed yellow, are—

Bolton Bays.
Golden Hamburghs.

In the second class he places first, those which have white hackles striped in the centre with black, viz.—

Silver Spangled.
Silver Pheasant.*
Silver Mooneys.
Silver Moss.

And in the second division of the same class, those which have yellow hackles striped in the centre with black, brown, or green, viz.—

Gold Spangled.
Gold Pheasant.*
Gold Mooneys.
Red Caps.
Copper Moss.

Some preliminary remarks on the Hamburgh family are requisite.

Buffon's general description is as follows—(we must apologise to all who claim kindred with them for quoting the

* These are merely other names for the Silver and Gold Spangled, and may be discarded altogether.

sobriquet by which he says they were known in his time) :—"The Hamburgh Cock, called also 'Velvet Breeches,' from the black velvety appearance of his thighs, is of grave and majestic deportment; bill is much pointed; iris of the eyes yellow, and the eyes are encircled with a rim of brown feathers, whence there springs up a tuft of black feathers, covering the ears; there are similar feathers behind the comb and below the wattles, and round black spots on the breast. The legs and feet are lead-coloured, except the soles, which are yellow."

Aldrovandus was acquainted with the Golden and Silver Hamburghs, as may be inferred from his rude woodcuts, though he calls the fowls whose likenesses they were intended to be, when limners had little notion of the skill and taste which our modern ones possess in this age of advanced art and science, the Turkish Cock and Turkish Hen. The peculiarly-formed rose-comb of each sex stands prominently revealed, as that of the Hamburgh. We take the liberty of using Mr. Dixon's translation of the passage, assuming that it is perfectly correct, and unnecessary for us to have recourse to the original:—"The cock, whose likeness we give, is called the Turkish Cock.* His whole body was in a manner inclined to white. Still the wing-feathers were partly black; the belly also was black. The tail consisted of feathers that were partly green, partly black; some also half green, some half black. His whole body was exquisitely adorned with lines, that were sometimes golden, sometimes silver; and it is wonderful what a beautiful effect this produced. His legs and feet were tinged with blue. The hen, which also is called Turkish, was all white, sprinkled over with black spots. The feet tinged with blue. The wattles were short when compared with those of the male. The next hen would seem

* This we have also included among the Bantams, to which, by general assent, he properly belongs.

the same, except that her neck was yellowish; she had a sharp point on the top of her head; her feet altogether blue, and an immaculate tail."

The expression "the lines were sometimes golden and sometimes silver," is confused. One would hardly have supposed that Aldrovandus could have seen in the same individual bird, lines that were of both golden and silver tints; yet it is not stated unequivocally that it was not so, nor that different birds are meant. The learned obscurity of this author must remain as originally given; and the woodcuts, not being in Mr. Weigall's style, throw no light on this point.

That the Hamburghs, however, are of old standing in England, is apparent from this notice.

We shall now individualize the sorts, according to the classification proposed, exactly in Mr. Dixon's order of arrangement:—

The Chittaprat.—The aliases of this *pencilled* race are the four succeeding names in the same column, which have to our ears some significancy that the word Chittaprat does not convey, without a little ingenuity. *Chit,* is a child, a little contemptible brat rather, and derived, it may be, from *Chico* (we have recourse to Dr. Johnson here), which is the Spanish for "little." This is the genteelest etymology within our power to adduce. Not being Oriental scholars, we cannot tell what *Chit* signifies in the Hindostanee—we know of Chittagong fowls. Our present compound, Chittaprat, may have some definite meaning beyond what the foregoing conjectural notions intimate. The breed in question is, however, small, and may have been designated by the word *Chit,* as we understand it; for the cock does not exceed sixteen inches in height, nor four pounds and a half in weight.

But then the second syllable, "prat," comes in to puzzle us. May not "prat" here be an abbreviation of "prate"—to chatter, to cackle? This will do: and if we had a doubt

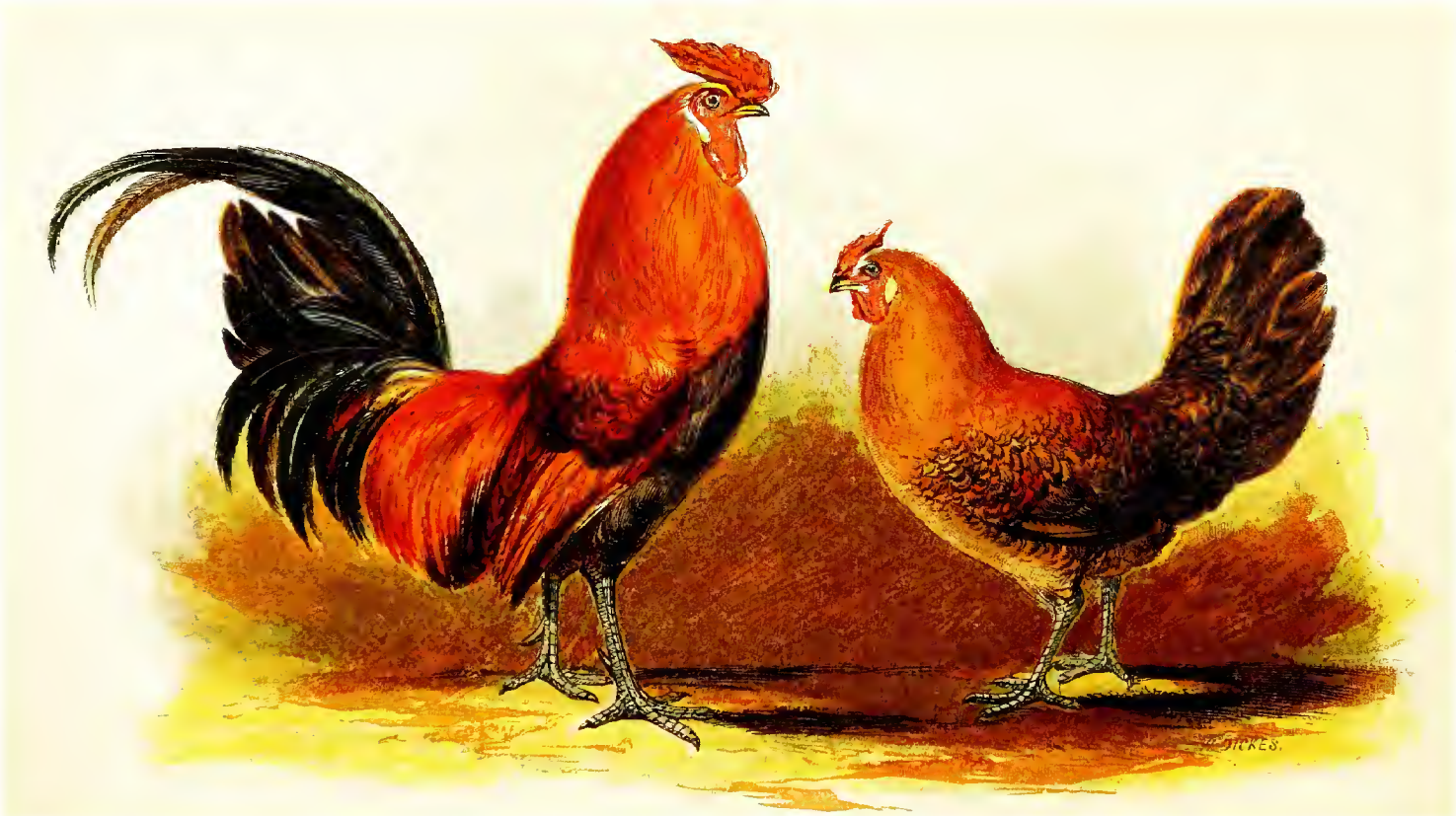
previously on the subject, we have, in this remark of Mr. Baily, sufficient to remove it: "They are the noisiest of the noisy, and nothing but death or liberty will induce them to hold their peace"—decided *prate-roosts*, then. Let our *imprimatur* go forth accordingly.

We have now to consider Chittaprats, Bolton Greys, Pencilled Dutch (they are frequently imported from Rotterdam), Silver Hamburghs, and Creoles altogether, as one and the same family; therefore one family picture will include them all. The ground-colour is pure white, with delicate black pencillings, which, however, in the cock, are few; both hackles white, and quite free from pencillings; breast white, and also without pencillings; wings barred with black; tail black, but the sickle-feathers edged with pinkish white; comb double, and coral-coloured; ear-lobes white; wattles large and round; legs blue, perfectly free from feathers, and neatly formed. The hen should have a pure white neck; "the whole of the body, wings, and tail, should be delicately but distinctly pencilled with clear black, upon a clear white ground; and there are in general such distinct pencillings or bars across each feather upon the body, the extremes being marked the most distinctly. The flight and tail feathers should be barred all the way up them."*

Lancashire is famous for the Hamburghs, which have obtained the names of the Bolton Greys, and Bays also, from the well-known town in that county. The appellation of Pencilled Dutch (and also of Dutch every-day layers) has been intimated in our previous remark, that Rotterdam has been the port from which these fowls have been imported into this country.

The *Bolton Bays*, or *Golden Hamburghs*, come next before us, the former being but a provincial name for the latter.

* Dixon.



BOLTON BAYS.

This is the second division of the First or Pencilled Class, and distinguished from it by having "a clear unmixed ochry-yellow ground, instead of white."

The hen represented in the plate fully answers the required distinctions as to ground-colour. The cock is more red than the strict rule would appear to warrant; but "we are told not to draw any conclusions from the colour of the Boltons alone, for that is extremely varied." It is often rich and brilliant.

The Bankiva being the original type of Game fowls, Bantams, and Hamburghs, the males are all furnished with two full sickle-feathers at each side. The Hamburgh is about the size of the Game cock. He should have no black, except a little marking on the wings. The plate represents him as quite free from this imperfection. The pike-form of the comb, reaching backward a considerable length, is noticeable, as are the short bill, the full crimson face, and the small white ear-lobe, which are true characteristics. Chaucer's lines, before alluded to, are so generally applicable to the bird before us, that they must not be omitted :—

> "His comb was redder than the fine *corall,*
> Embattled as it were a castel wall;
> His bill was black, and as the jet it shone,
> Like azure were his legges and his tone [toes,]
> His nails whiter than the lily flour,
> And like the burned gold was his colour."

The hen has a similar ear-lobe, and the yellow buff hackle is true to her natural appearance.

We now come to the second, or Spangled class of Hamburghs, with darker hackle.

The Silver Spangled.—These, which are a sub-variety of the Silver Pencilled, have also white for their ground-colour, and black spots upon every feather. The hackles have black stripes along the central line of each feather, which exhibit

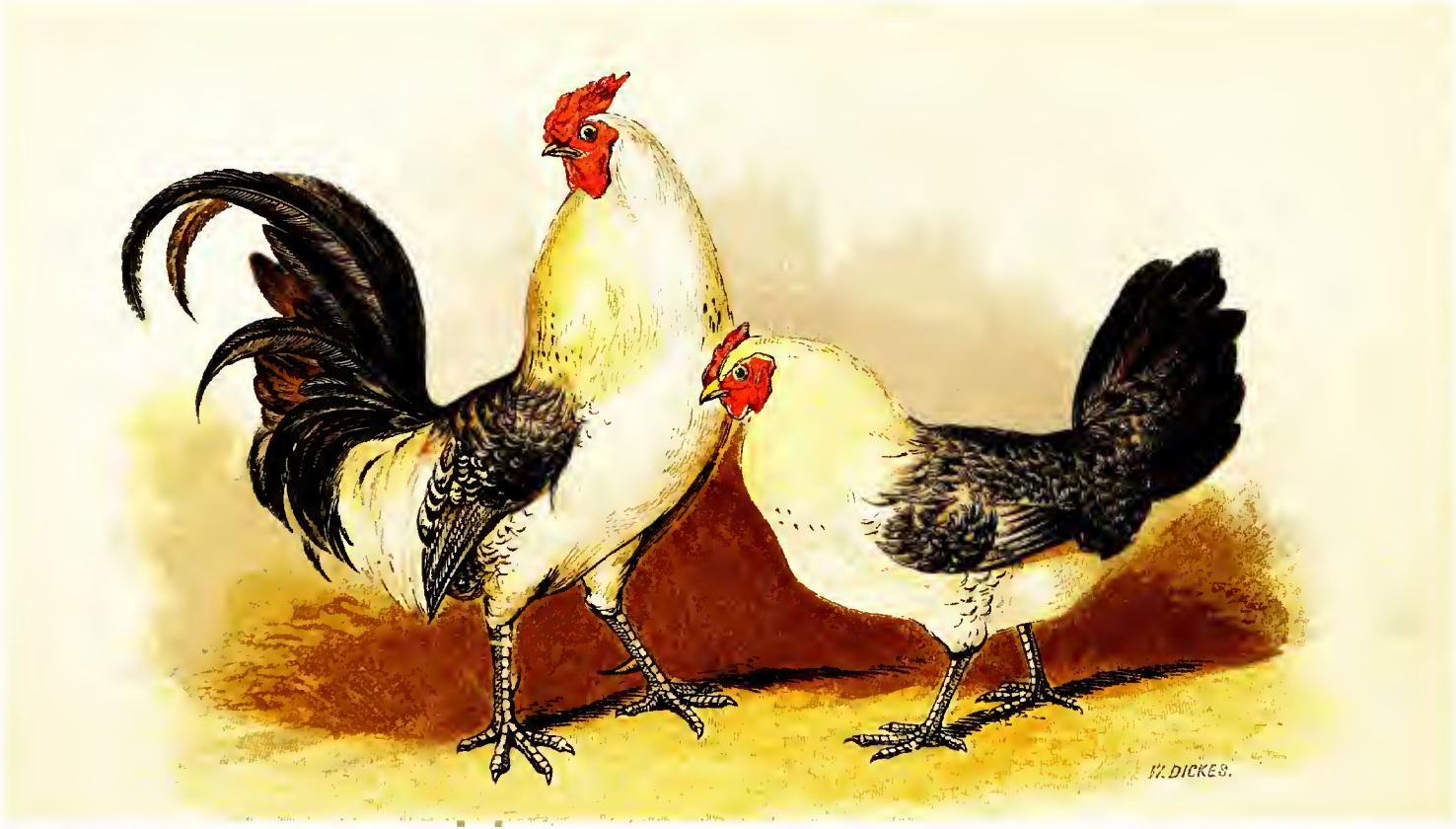
the white edgings more distinctly from the contrast; the breast evenly spangled; the tail-feathers are spangled with black and white; the comb is the same as that already described, and fully two inches in breadth, as is the ear-lobe; the bill is white; the legs are of a lighter blue than in the pencilled class.

The hen is singularly beautiful, and just the sort to be kept as a pet, and admired, as she universally is, at public exhibitions; the black markings on her clear white hackles, which have a very pleasing effect, are noticed as a very distinctive point between this and the Pencilled Hamburgh, the hen of the latter sort having pencillings across the feathers, whereas the former have but a single spangle on each; the tail-feathers, of much white with black tips, add to the beauty of the whole plumage.

"We think that the spangle which approaches to a circular form is the most correct, for when of the crescent or horse-shoe shape, it appears to be passing towards the laced character. When the spangle is of the crescent form, the plumage may have a gayer and lighter aspect (we are speaking of the dark spangled); but when the spangle is circular or oval, the plumage is richer to the eye. The ground-colour must be perfectly clear."*

The three other names associated with the Silver Spangled are, in fact, the same sort of birds, or with distinctions too imperfectly defined to be intelligible. Some of the Poultry Clubs in the north of England have added the name of Pheasant both to the Silver and Golden Spangled Hamburghs, though that bird itself has no affinity with them. These have been so called in addition to their proper family name, from their silver and gold markings, which respectively resemble those of the silver and gold pheasants. Standards of desirable points and markings being specified by the clubs,

* "The Poultry Book."



SILVER HAMBURG.

the members exert themselves accordingly to produce specimens possessing them; and it is not surprising that local denominations should in some instances be given to them by successful breeders.

The *Golden Spangled* only differs from the Silver Spangled family in having a yellow or golden bottom-colour: in all other respects they are the same. Mr. Nolan gives as the weight, five and a half pounds for the cock, and four and a half for the hen; and nineteen inches in height to the former, and designates the colour "reddish yellow." We cannot withhold Mr. Baily's opinion respecting the varieties, as far at least as appellations are in question; he entirely identifies the Moss with the Mooney, which he thinks is in both classes an offshoot from the Hamburgh. He says of them, "Whether the colour be white or yellow, the whole of the body should be spangled with black; each spangle should be full, plain, and rich, and the wings should be well barred with the same colour. On one point a diversity of opinion exists: while some like the breast clouded, others insist on accurate and well-defined spangles; my own opinion is strongly in favour of the last, and I have always considered that the spangles should be, if possible, as correct as the lacing of a Sebright Bantam. Both cock and hen have ample tails. They have blue legs, their carriage is cheerful, they are good layers, good mothers, and are very hardy. They are also called Spangled Hamburghs. I have never considered they had any claim to that name."

The most satisfactory exposition that can be given of the points required by the Poultry Clubs in the north of England, where the Hamburghs are enthusiastically admired and carefully bred, is that which their printed rules specify respecting the Golden Hamburghs; and a careful perusal of them will show whether, or how far the Mooneys be, or be not, distinguished from the main stock of Hamburghs.

Points.	*Marks on Feathers, &c., considered best.*
1. Comb	Best double; best square; the most erect, and best spiked behind.
2. Ears	The largest and best white.
3. Neck	The best streaked with green-black in the middle of the feathers; and best tringed with gold at the edges.
4. Breast	The largest moons; brightest and best green-black, most free from being tipped with white or red at the end of the moon, and the clearest and best red from the moon to the bottom colour.
5. Back	The largest moons; brightest and best green-black, least tipped with white or red at the edges of the moon, and the best and clearest red from the moon to the bottom-colour.
6. Rump	The largest moons; brightest and best green-black, least tipped with white or red at the edges of the moon, and the best and clearest red from the moon to the bottom-colour.
7. Wing. — Divided into four parts. 1st Bow	Best and brightest green-black, and best and clearest red.
2. Bars	To have two distinct bars, composed of the largest, clearest, brightest, and best green-black moons, and the clearest and best red from the moon to the bottom-colour.
3. Flight	The clearest and best red.
4. The lacing, or top of the wing above the flight	The largest, clearest, brightest, and best green-black spots on the ends of the feathers, and the best and clearest red from the spot to the bottom-colour.
8. Tail	The brightest, darkest, and best green-black. To be full-feathered.
9. Legs	The best and clearest blue.
10. General Appearance.	The best-feathered hen.

The *Red Cap* has, perhaps, a larger comb than ordinary, but it has nothing of head-dress beyond a comb. If this, or any sort, should have a topknot, it is of impure breed. And in Mr. Baily's succinct and decisive phraseology, "no true Hamburgh has topknot, single comb, white legs, any approach to feather on the legs, white tail, or spotted hackle."

Mr. Nolan has obtained another table of club-rules from the north, which beats the south of England in Hamburghs in general opinion, respecting the variety called the Black Pheasant, which is bred, he has no doubt, from the other Pheasant Hamburghs mentioned. The rich glossy black of this variety has no resemblance to that of the true pheasant. The points required in this variety by the collective wisdom of the amateurs, are as follow :—

Points.	*Marks on Feathers, &c., considered best.*
1. Comb.....	Best double ; best square ; most erect, and best spiked behind.
2. Ears.....	Largest and best white.
3. Colour.....	The best and richest glossed green-black.
4. Legs.....	Best and clearest blue.
5. General Appearance..	Best-feathered hen.

We have a cockerel of this breed, who at four months old assumed the airs and duties of the head of the family. A Cochin cockerel, two months older, and three times his size and weight, was a perfect noodle among them, of true hobble-de-hoy awkwardness and diffidence, and allowed the little precocious fellow to treat him with the utmost impertinence, and to drive him to a respectful distance from the dames of the court-yard. This senior cockerel was removed for a few days, and during his absence the other took upon him even additional airs of importance, and considered his authority so established, that on the return of the other he flew at him with rage, and beat him severely; in short, we may say, in schoolboy's parlance, that he sent him crying to his mother. However, the big bird after a while was aroused to a consciousness of his strength, and gave his tyrant a sound drubbing, which spoiled his beauty for a week.

The Guinea Fowl.

Numida: Linnæus. *Guinea Pintado:* Latham.

This bird was well known to the ancients. The Greeks called it Meleagris, under the notion that it was the result of the metamorphosis of the sisters of Meleager. The spots they conceived to be the traces of the tears that had been shed on the occasion. Linnæus and some other naturalists have made the original mistake, or adopted the error of predecessors, in giving the general name of Meleagris (which belongs exclusively to the bird in question) to the turkey also, although this bird was not known in the Old World until the sixteenth century.

The Guinea fowl is treated of by Buffon at great length, under the denomination of *La Peintade* (the *Pintado* of Spain and Portugal), and he has supplied a note containing the many names by which it is known in different countries, most of them indicating its African origin.*

Many of the ancients have made mention of the Meleagris —Varro, Pliny, and Columella; and among moderns there is a long enumeration of those who have described it. Aristotle noticed the little spots on the eggs, though he gave his philosophy no trouble concerning the nature of

* *Meleagris*, in Greek and Latin; in Italian, *Gallina di Numidia;* in German, *Perl-huhn; Poule de la Guinée*, Belon; Guinea-hen, in English; *Meleagris* vel *Gallus Numidicus* aut *Mauritanus silvestris*, Gesner; *Gallina Africana*, Frisch. By the Irish peasantry it is called the *Gallini*, and we have also heard it so called (with the Italian pronunciation) by farmers' wives in England.

the bird itself. And others among the learned naturalists of antiquity have confounded distinctions of sex and those of species in a very loose and contradictory manner.

The Guinea Pintado is our common and well-known species. We select Latham's description of it:—"Length twenty-two inches; bill reddish horn-colour; head bare of feathers, and bluish; on the top, at the hind part, a bluish-red protuberance, conical in shape and compressed laterally; from the base of the upper mandible hangs on each side a bluish-red wattle; the neck is sparingly beset with hairy feathers, and the skin which appears between is bluish ash-colour; the lower part of the neck is feathered, and inclines more to violet; the rest of the plumage black, marked with round white spots of different sizes, and crossed in the intermediate spaces with grey lines, the wings and tail not excepted; legs greyish-brown; the female has the wattles rather less in size and red, which in the male are inclined to blue."

The discussions which arose as to distinctions of species and sex, are curious.

The French Academicians decided that certain differences, brought to their attention, were only those of sex—the determination of which point was not easily effected, if we may judge from the conflicting assertions made, at different periods, by individuals deserving of highest respect—Aldrovandus and Dampier in the number—and detailed at considerable length by Buffon. We produce a specimen of the discordant judgments.

The head of the female is quite black, and this is the only difference, says Dr. Caius (who wrote nearly three hundred years ago). The colours in both sexes are the same, but the helmet of the female is lower and more obtuse, remarks Aldrovandus. She has no helmet at all, says Roberts.

The cock has red wattles, and caruncles bordering the nostrils; the hen has neither—exclaim Dampier and Labat.

The hen has both wattles and caruncles, replies M. Barrère, but they are paler than in the male, and the hairs at the back of her head are thinner; and he triumphantly points to a portrait of the bird by Dr. Frisch. And the Academicians found some specimens with these threadlike hairs raised so that they looked like little tufts, or miniature *toupets*, such as ladies formerly wore, only that these placed them on the crown of the head, whereas the fowls had them behind, on that portion of the head where the bonnet is now worn.

As to the various opinions respecting the colour of the wattles, the fable of the Chameleon seems to be in point. Different varieties may have been referred to by the several naturalists, or the birds might have been viewed in different climates, and, therefore, under different conditions as to health, feeding, and even of crossings.

The eye, however, cannot, without great experience, distinguish the difference of sex, and this is the first point we have to clear up, until the birds are about six months old. When young, their dark and zebra-like stripes, which have none of the speckles that afterwards embellish the dark grey or blackish plumage, and orange-tinged bills and shanks, are alike in both sexes, and have no similitude to the feathering of the parents from which they proceeded. When pretty well grown, however, the male bird will be found larger, though always of much feminine appearance, and to have the horny peg-like appendage on the head (which even in the varieties not of the mitred class, is characteristic of the Guinea fowl) larger in the male than in the female. Mr. Dixon adduces as the only unerring criterion, even in maturer life, the accentuation of the call-note, which sounds so like "come back." The hen accents the second syllable, *bāck*, which the cock does not. Their usual language is comprehended in a very brief vocabulary, which learned linguists have

ascertained to be best expressed by our syllables *ceuk-ceuk*, and *chi-wi*.* And certainly they ring the changes on their limited words to a very annoying degree. They have well earned the reproach of being the most clamorous and discordant of poultry, whose cries sound like creaking hinges or ungreased axles.

The want of feathers on the head and upper part of the neck of the Guinea fowl, generally gave rise to the mistake that the *Turkey* was the Meleagris of the ancients, though that noble bird was never seen in the old world until the discovery of America, where it had its first existence.

It is strange, that though so well known to the ancients, all practical knowledge of the Guinea fowl has been very rare during centuries, and until a comparatively recent period in our country. "Its name does not occur among the list of birds appointed to be served up at the famous feast of Archbishop Neville, in the reign of Edward IV. It does not appear in the Duke of Northumberland's Household Book (1512), nor is it alluded to in the Household Book of Henry VIII. Must we not, then, pardon those who considered the turkey as the Meleagris, seeing, if our suspicions be correct, that they did not know the Guinea fowl?"†

But we learn from Beckman's "History of Inventions," that the English monks bred these birds in 1277, and called them *aves Africanæ*.

* A peculiarity of organization in the trachea and thorax either necessitates this perpetual chattering, or gives a sustaining power to the voice. Into the anatomy of their lungs we need not enter, nor into that of the intestinal canal, which differs in its proportion of length from that of other fowls. As to their language, we may remark, it was indeed a stretch of lively imagination which led the Greek writer Ælian to say that this bird nearly pronounced its own Greek name, *Meleagris*. That must have been a clever bird, indeed, which could have so accommodated its imperfect organs of speech to the pronunciation of the grandiloquently sonorous language of the Greeks, who, by the way, concocted a word of three syllables, to express the peculiar crying of these birds.

† The "Poultry Yard," by W. C. L. Martin.

They were carried to South America by vessels trading in African slaves, and there they were let loose to multiply in the woods and savannahs to a vast extent. It is a congenial climate for them, and so also is India, where we are told by Colonel Sykes, they are not yet very common, and only in the domestic state. They thrive as well there as in their native country.

Besides the other characteristics of the *Guinea Pintado* given by him, Buffon notices in both sexes the falling tail, the round back, the absence of spurs, and the existence of "half-membranes" (or webs) between the claws; from which it had been concluded by the testimony of some ancient and modern writers, that this bird was demi-aquatic.*

We have not perceived any inter-digital membrane on either living or dead specimens of any species of the Pintado larger than in the turkey: but some of the wild sorts *may*, however, be provided by Providence with a sufficiency of web between the claws to support their bodies in the marshy regions of Africa. Such a provision would be in harmony with the Creator's beneficence and wisdom, as displayed in corresponding cases. It would be but one of his gifts to a creature requiring it, and unable to contrive any pedal support for itself, corresponding with the human contrivance of the snow-shoe, in countries requiring a wide base for the foot, to prevent the body from sinking into the soft snow.

Of the many species and varieties of Pintado on the continent and islands of Africa, we suppose that some would be found to correspond with the description of the naturalists who have so distinctly declared the existence of this remarkable organization of claw.

No wonder that with a drooping tail, round or humpy back, and spurless legs, the cocks should so resemble hens as

* He refers, on this point, to Pliny's "Natural History," and to Gesner, and Adanson, who had made a voyage to Senegal.

to be undistinguishable from them. The Italians might well give the name of Gallina to the masculine as to the feminine gender of Guinea fowls.

The Crested is very pretty; but smaller than the common sort. Though designated as "crested," it has but a tuft. It has no wattles, but a sort of fold at the angles of the mouth; the space round the ears bare; the fore part of the throat sanguineous; a crest of thick-set, slender black feathers, the greater part of which turn backwards, but inclining on the forepart over the bill; the whole plumage black; the neck and fore part of the body plain; the rest covered with bluish spots, little bigger than millet-seeds; prime quills blackish-brown; secondaries the same, with four spots, two or three on the outer margins broad and white; the tail, which has fourteen feathers, is crossed with black lines, but hid by the upper coverts; legs blackish, hind claw elevated from the ground, bent and blunt at the end.

This is found in the burning regions of Africa, and in the country of the great Numaquois. Columella treats of a *Numidian* bird, "like a Meleagris, except that it bears on its head a red helmet and comb, both which are blue in the Meleagris." Now whether this crested sort, or any distinct species of Pintado was meant, we have no means of deciding.

The Mitred Pintado, which has more muscular claws than those of other species, is especially distinguished by a horny conical-shaped casque, which in the adult state is about an inch and a half high,* which Buffon compared to the bonnet of the doge of Venice, with the hind part brought to the front. Being a stout headpiece, it serves the wild wearer as a morion against the larger and more powerful beaks of his

* This casque, and the barbles on the lower jaw, are not distinguishable before the birds are six months old,—a critical time for them. It is analogous to the period of shooting the red in turkeys.

Numidian kindred and wild enemies. This is a species only seen in rare collections. It does not appear that any efforts have been made to domesticate the crested and mitred species, though there is no reason to suppose that they might not be tamed and naturalized in this country as the common Guinea fowl is. They are all interesting-looking birds, not indeed showy in plumage (which has pleasing disparities), but, to use Buffon's expressive phrase, *très distingués*. The naturalization in this country of the common kind has, it seems, been attended with much alteration of tints from those of the bird in its native climate. The "pearly" white spots are more or less diffused, however, and in larger or smaller form, in all the varieties we have seen, living or dead.

Our modern Poultry Books give us the names of some English varieties or sub-varieties of the *Guinea Pintado*—the species known to us, viz.:—

The Netted Guinea Fowl, which has the appearance of network, as indicated by the name, produced by the black spotting on white ground,—is not common.

The Self-coloured Guinea Fowl, which has a uniformity of unspotted leaden-grey plumage.

The White Guinea Fowl.—Plumage all white, and therefore not as pleasing as if variegated with black spangles or spots.

The Pied variety exhibits patches of white, more or less extended on the neck, breast, and belly; and this offspring of crossings, or breeding in and in, is of very inferior plumage to that of the original kind.

As the flesh of the Guinea fowl has somewhat a game flavour, like that of the pheasant, attempts have been made to propagate this race in preserves with pheasants, as game. A *battue* for shooting such large and heavy-flying birds, would be, however exciting to unpractised sportsmen, but murderous work to experienced ones.

M. Temminck, the celebrated naturalist, tried to associate pheasants and Guinea fowls together in a state of liberty; but his experiment failed, from the dislike which the latter had to mingle with the others, and the determination with which they pursued and dislodged them. In this instance, the Africans have had the victory over the descendants of Asiatics. A similar attempt was made on mountains of the county of Dublin, but it also failed; not from any opposition which the immigrant Numidians encountered from previous colonists, still less from collision with pheasants, but from want of food (in Mr. Nolan's opinion) during the *winter* season.

To supply our tables with a good substitute for game, the Guinea fowls of the preceding season, but not older, are excellent; as they are in high season after the first of February for two months longer, and are then worth about six shillings a couple. They look like well-breasted barn-door fowls, when trussed and dressed; and the breast to our taste is hardly distinguishable from that of the turkey, though, as we have said, it is considered also like that of the pheasant.

As they are also bountiful producers of eggs—everlasting layers—small though their eggs be, they are worth keeping to a much greater extent than they are now reared. Of all our birds, they are the most prolific of eggs; even the process of moulting is sometimes insufficient to draw off the nutriment the creature takes to make feathers instead of eggs, and the poor thing will sometimes go about half-naked in the chilly autumnal months, like a fowl that has escaped from the cook to avoid the preparation for the spit, unable to refrain from its diurnal visit to the nest, and consequently unable to furnish itself with a new great coat. As the body of a good cow is a distillery for converting all sorts of herbage into milk, and nothing else, or as little else as possible, so the body of the Guinea hen is a most ad-

mirable machine for producing eggs out of insects, vegetables, grain, garbage, or whatever an omnivorous creature can lay hold of.*

These birds, even in domestication, preserve the monogamous disposition common to fowls in a state of nature. Though they associate in "packs," they are strictly paired, the rare exceptions to the rule arising only from very peculiar circumstances. Naturalists have not sufficiently, if at all, noticed this (though evidently an important point when their eggs are to be hatched), and on the contrary, some supposing the male to be as polygamous as a Turk of high degree, have limited him to no fewer than ten wives. This is such a practical point to the breeder, that we need not apologise for adducing another extract on this subject. "No Poultry Book that I have ever seen, tells you that the Guinea fowl is a monogamous bird, pairs with his mate, like a partridge or a pigeon, and remains faithful to her. It is generally supposed, that the male Guinea fowl, like the common cock, is pleased with a plurality of wives; and the supposition is acted upon with bad practical effect. In the case where a Guinea cock and two hens are kept—a usual number—it will be found on close observation, that though the three keep together, so as to form 'one pack,' according to their original instinct, yet that the cock and one hen will be unkind and stingy to the other unfortunate female, keep her at a certain distance, merely suffering her society, and making her feel that she is with them only on sufferance. The neglected hen will lay eggs, in appearance like those of the other, but not so many; probably in the same nest. If they are to be eaten, all well and good; but if a brood is wanted, and the eggs of the despised one happen to be taken for the purpose of hatching, the result is disappointment and addled eggs. I have known this occur repeatedly. Therefore

* Dixon.

let all those who wish to succeed with Guinea fowls, match their birds as strictly as the couples in a country dance."

The hens will lay, if possible, in the most retired and out-of-the-way places. Last season three of them were in the habit of stealing away to lay in a wheat-field, and in harvest about half a bushel of eggs was found in a single nest. Their eggs, which are much smaller than those of the common hen, and surprisingly diminutive in proportion to the size of the bird, are furnished with a very hard shell, of reddish hue, which becomes paler soon after it has been laid; and the round spots with which the shells of the wild birds are variegated, disappear under the influence of domestication.

As the Guinea hen rarely sits, and is under, we fear, the just imputation of deficiency of philoprogenitiveness, or natural affection for her offspring when she has any (in Africa, the sun, probably, does the hatching work for her, as for the ostrich), even when perfectly domesticated, a deputy hen must be provided for the purpose of hatching her eggs, and she must be engaged to sit steadily during an entire month.

At the end of this lengthened period, the chicks appear, in a state of vivacity and vigour much exceeding that of other newly-born fowls, and can soon use their tiny wings, fluttering about their nursing-mother at her call, and ready to accompany her through the orchards and shrubberies, where they find congenial sport in the pursuit of the grubs and maggots, insects, and such-like game, on which it is their nature and delight to prey. They are beautifully striped when young, and do not then show any of the speckled feathering which they will afterwards display. To the eye of the observer, the sexes are, as has been partly intimated, undistinguishable until they are at least six months old; then the larger horny substance on the head, rising from it like a

peg, and the larger size of the body, will enable one to decide as to the sex, without minuter examination.

Yet though their pinions are soon feathered, these birds are not so much disposed to rise from the ground as to run rapidly upon it; which, being very shy, they will do at the approach of each stranger, scampering away in a body, and uttering their horribly discordant cry, to any covert within their reach. They are very sociable, however, among themselves, and keep together always—by day in the most secluded and woodland walks within their limits, and at night perching on the same high tree. Sleeping in the open air, however, in hard winters, does not always suit the delicacy of their females,—if we may judge from an isolated fact. The three hens to which we have alluded as having laid so bountifully last year, were in the habit of roosting on a tree near the margin of the river Kennet, in "sunny Berkshire." They died. Two of their family survived, and we have lately visited them. They are fine specimens, and rather of the piebald kind, having entirely white breasts, but still handsome birds. They are the last survivors of their family, and, as far as appearances go, will leave no issue, inasmuch as they are a pair of Toms, as the poultry-maid called them, but as we may designate them, two old bachelors, who seem quite contented without female society, and hardy enough to live out a few winters more on the favourite tree, in affectionate brotherhood, unless indeed the lady to whom they belong should insist on their forming new matrimonial connections, about which they seem to be quite careless. They come and feed about the yard with other fowls when they are hungry, and then unsociably go off to their secluded field, and remain apart until appetite induces them to join the poultry company again. These two birds have none of the turbulence and bullying manners so commonly attributed to Guinea fowls,

among the poultry they live with. As to Guinea fowls terrifying turkeys, if offended or in a fighting humour, we have great doubts. Though so much more active and ready with their beaks, it can hardly be supposed they would willingly encounter, single-handed, a cock bird of such preponderating weight and size. The Guinea fowl does not weigh more than four pounds; what chance could it have of beating a turkey three or four times its weight? even though the Guinea hen —the feminine here is more worthy than the masculine— can turn round, according to one of its panegyrists, ten times, and give twenty blows with its bill, before the Turkey could assume the defensive. Buffon must refer to the wild tribes of Guinea birds, when he compares their mode of fighting to that of the Numidian horsemen, as related by Sallust: "their charge is fierce and irregular; if they meet with resistance, they turn tail, yet, in the next instant are upon their enemy."

They are harmless, inoffensive creatures in our mild climate and under the effects of domestication, but on the score of utility and profit are not to be recommended as stock, unless in extensive grounds suited to their rambling and wary habits, and where there is a watchful eye over them in their retirements, to discover the eggs which they seek to deposit in out-of-the-way places—in a tussock of rushes or weeds of any sort, a heap of leaves, a furze-bush or shrub, the bank of a ditch, a hedge-row, or the furrows of a corn-field.

The best chance of having a quiet stay-at-home family pair of Guinea fowls (which, however, must have an extent of range) is to have them hatched on the premises, from which they will be less disposed to ramble, than if they had been brought there when grown up. A great deal too depends upon the feeding hand towards inducing tameness of habit. Once attached to their location, they will have no temptation to

leave it, unless they should be worried or excited by troublesome and thoughtless boys, to whom mischief is so often a luxury.

They should be regularly fed, morning and evening, as they do not search for their food with the ability and zeal of common fowls. By this means, hens will be missed, if they are brooding on some hidden nest, which would be but lost labour if late in the year. They sometimes make their reappearance in the poultry-yard, with a brood at their heels, after an absence of four weeks—so late that the chances of rearing the chicks may be very few; and thus the eggs will have been profitless, and the labour of the hen without benefit, either to herself or her owner. Curds, grits, and such food as is given to young turkey poults, are fit for Guinea chicks, which very quickly begin to luxuriate upon the larvæ of insects and grubs; these, with the regular morning and evening meals, continued after the rearing process is entirely completed, will keep them in what is termed game condition, without any additional food before killing, except whatever tailings of corn may be at hand. Confinement and cramming would injure the nice flavour which they should possess.

As they love a high roost, they should be accustomed, from the beginning, to perch at the top of a poultry-house especially arranged for them and turkeys, or peafowls, most of which may be induced by gentle treatment to occupy the same lodging-house, though they will all, true to their natural instincts, prefer a roost on high trees; and this in summer is unobjectionable, as to ventilation and temperature the risk in winter, from snow-storms and pelting rains, the danger from thieves, and also injury to their health in a cold moist climate, from exposure to the night air, render a covered sleeping-place indispensable, at least for the young broods. The old birds have an almost unrestrainable desire

to roost by night in the open air: if they have thick evergreen shelter to protect them, let them have their own way.

The peculiar ailments to which they are liable, are those of the liver and spleen; and even instances have been noted of a total deficiency of gall; in which cases, the liver was greatly enlarged. But once reared, they are very hardy creatures, and as unlikely to give trouble to the poultry doctor, as any of the fowls in our yards.

The Peacock.

Pavo: Linnæus. *Paon:* Albus and Varius. *Pavone:* Italian. *Pfau:* German.

We are as fond of tracing words, as we are desirous of tracing birds, from their originals. How *Pea* has come from *Pa,* the first syllable of the Latin *Pavo,* or French *Paon,* or Saxon *Pawa,* no one can tell us so well as our lexicographer Johnson. "Perhaps it is *Peak-cock,* from the tuft of feathers (an aigrette) on its head, the peak of women being an ancient ornament: if it be not rather a corruption of *beaucoq,* from the more striking lustre of its spangled train." We incline to the former derivation, as the aigrette is a very distinguishing ornament.

Some naturalists have placed the Peacock (as he deserves) at the head of the *rasores,* as the largest and most magnificent of the whole gallinaceous order, and the Guinea fowls at the foot. We have rather inadvertently given precedence to the last-named, and more than the due space of pages, and must now sound a flourish of trumpets and usher in the Prince of Birds, who once walked in the train of imperial Juno. The great antiquity of this really illustrious bird is matter of history. "Once in three years came the navy of Tharshish, bringing to Solomon, ivory, apes, and peacocks"*—probably from India or from Persia. Colonel Sykes found one species of them abounding in the Ghauts, and flocking numerously about Hindoo temples in the Deccan. Colonel

* 1 Kings x.

PEACOCK.

Williamson, another Eastern traveller, asserted that he saw, in passes of the Jungletery, from twelve to fifteen hundred of them of various kinds, within sight of the spot where he stood, of beautiful plumage, to which the sun imparted additional brilliancy. And possibly this officer was not aware at the moment of his enthusiastic admiration, that Alexander the Great, in a march through India, where he would have sacrificed human lives by thousands to gratify his thirst of conquest,—of glory, as it is so falsely called,—so admired their splendour, that he issued a military order against putting any of them to death. Soon afterwards they became known in Greece and Italy, and Roman emperors had them served up at table at enormous prices.*

That a young pea-fowl is juicy and delicate, and equal to turkey, is a fact which we have more than once tested at our own table; but it is not deserving of the extravagant encomiums which the imperial gluttons of Rome, and the great sensualists of their times, bestowed upon them. It was the rarity, and therefore the costliness of the dish, which probably imparted the charm to men who had more wealth than morality.

There was a time when no feast in the lands of chivalry was complete without the pea-fowl, served up in its gorgeous feathers; and to use the expression of a writer in the "Penny Cyclopædia," "the adventurous knight made his solemn vow before the Peacock and the ladies." †

* One of the poulterers of those luxurious times is said to have realized nearly half a million sterling a year by rearing and fattening pea-fowl for the table.

† It must have been in allusion to this trait of chivalrous custom, that Mr. Praed, in a charade, introduces the Peacock as saying,—

"I graced Don Pedro's revelry,
All dressed in fire and feather,
When loveliness and chivalry
Were met to feast together.

It is matter of wonder that until M. Temminck's time, no exact figure of this bird had been taken from nature.

Latham enumerates seven kinds of the Peacock, viz.—

The Crested.
The Black-shouldered.
The Javan.
The Japan.
The Iris.
The Thibet, and
The Malay.

We shall first notice the wild Peacock generally: —

"In brilliancy of plumage, the wild Peacock stands unrivalled among the feathered race. Vainly should we attempt to put any other species in competition with him in these attributes of magnificence; no species can rival him, and if we could venture to set a limit to the boundless riches with which nature can clothe the animated creation, we might be tempted, under this point of view, to consider the wild Peacock as the *chef-d'œuvre* of her productions, the union of every various external beauty, the *ne plus ultra* of splendour. We find in his incomparable robe, united, all the brilliant colours that we admire separately in other birds; we find all that glistens in the rainbow, and sparkles in the mine; the azure tints of heaven, and the emerald of the field." *

If the vainest Peacock that ever expanded a tail is not satisfied with this homage to his transcendent beauty, he must have an insatiable appetite for adulation.

"He vowed a vow in foremost fight,
To drive the Moors from Cadiz;
And this he did, that gallant knight,
For me, and for the ladies."

We have taken a slight liberty with the last stanza, to make it more strictly *à propos*.

* Griffiths' Cuvier.

The wild Peacock, which is somewhat smaller than the domestic sort, is surpassingly brilliant in plumage: like the other, it possesses the elegant aigrette; but with more brilliancy of azure, with reflections of green and gold about the head; and the shadings of these tints, which are especially resplendent in the upper wing-coverts, blend, with the most striking effect, with the broad edgings of purple shading into a bronze tint. The unclouded and powerful sunshine, which renders Asia the paradise of the feathered races, communicates to their plumage, with their glances of fire, a lustrous radiancy which the domesticated tribes under our sombre skies never possess in the same degree.

The Javan Peacock may be seen at the Zoological Gardens in the Regent's Park. This splendid creature was brought from India by the Countess of Dalhousie.

The neck is green and bronzed, wattles small; the flight-feathers chocolate, edged with dark brown—aigrette of metallic green; the head small and oblong; eye dark, with a white circle around it; tail-feathers bright yellow, brown, green, and gold; legs bluish-black. A more showy little Peacock can hardly be imagined.

In both wild and domestic pea-fowls, the aigrette consists of twenty-four upright and slender feathers, about two inches long, with barbs on the top.

The wild Peacock is compared in size with a small turkey; the domestic, with a middle-sized one.

Sonnini has given at much length the characteristics of our domestic pea-fowl. The chief points, in addition to those we have incidentally spoken of, are as follow:—Green, gold, and blue, prevail about the head, throat, neck, and breast; on each side of the head are ten long white spots, one above the other, below the eye; the points of the aigrette-feathers exhibit the colours that embellish the top of the head; the feathers of the back and rump are, for the most part, a

golden green, emitting reflections of copper, edged and pointed at the extremities with black; the stem of each feather of the different series of tail-coverts is white, and furnished along the whole length with barbs of golden-green tints of copper. The heart-shaped spot resembling an eye, surrounded with green, blue, and violet hues, at the end of the tail-feathers, where the barbs unite, is one of the most remarkable features in this singular bird. These eyes are numerous. We need not state the mythological story which rendered them so useful as optical instruments to Juno:—

"The ancient poets Argus prize,
Who boasted of his hundred eyes."*

* The *Argus*, properly so called, is a different species altogether, if it may not be considered, according to M. Temminck's proposition, as a distinct genus. The only species known to us is the *Argus giganteus*, Temminck; the Argus Pheasant, Latham. It was brought to Batavia from Malacca, in 1780, and produced a great sensation when first seen. It is a native of the Indian islands, and has the gorgeous splendour peculiar to the birds of those localities. From the "Penny Cyclopædia," we take its characters:—"In bulk, not exceeding an ordinary fowl, but measuring from the tip of the bill to the extremity of the two long tail-feathers, five feet three inches, of which length those feathers form three feet eight inches; throat, upper part of the neck and cheeks naked, or nearly so, there being only a few black hairs dispersed over them; feathers of the head and back of the neck short and velvety; lower part of the neck, breast, belly, and thighs, reddish brown—each feather speckled with dull yellow and black; upper part of the back and lesser wing-coverts clear ochraceous yellow, with brown spots; the longest paler, with spots thicker than on the back, and reddish brown in the centre; tail deep chestnut, sprinkled with white spots, which are encircled by a black ring; the wings, the secondaries of which are three times as long as the primary quills, are painted, and ocellated (full of eyes), in a manner that defies description." It might have been added, that the shanks are long, slender, and spurless. The colouring has drawn forth the poetic enthusiasm of another writer, who closes his remarks in these glowing terms:—"Nature, unsatisfied with having charmed our sight with the resplendency of purple, gold, and azure, in the Peacock, the Bird of Paradise, and the Humming-bird, appears desirous of revealing to us all the resources of her art by producing the most elegant and harmonious shades, even from the refuse of her inimitable palette." The task of detailing with scientific precision the form and exact colour of each feather, is properly the pleasing duty of the PLUMIAN Professor in one of our universities, who will, of course, answer the inquiries of correspondents upon any point connected with this branch of ornithological science, for which the professorship was doubtless instituted and endowed.

But we must proceed with Sonnini and the editors of Cuvier, for an epitome of the main points that are yet to be enumerated.

The outer row of feathers has not this eye inclosed in a circle of gold and copper, but is plain and dusky. The tail contains fourteen quills, and is greyish brown, as are also the lower tail-coverts; the upper wing-coverts are mostly of dark fawn; the middle coverts deep blue, shading into golden green; and the great coverts reddish; the wing has twenty-four quills, some of which are reddish, the others with blackish spots and fringed with golden green; on the outer edge, the iris of the eye is yellow; the bill whitish; and the feet and claws grey. The cock has a thick sharp spur three-fourths of an inch long. The hen is smaller, much plainer in her dress, wearing rather a half-mourning suit, except on her neck and throat, which are green; her train is very short, and her aigrette lower than that of the male.

The extraordinary power which both the wild and domestic Peacock have of expanding their tails seems first to have been anatomically noticed by Latham, who, however, did not discover the true cause of the tremulous movement and horizontal position which the fibres acquire at certain moments of the expansion. He attributed this movement to an electric power in the tail, and the sound which the quills make at times, he thought was occasioned by the explosion of the electric matter. Mr. White, of Selborne, however, perceived the facts of the case, which he has related thus:—"I could not help observing that the trains of those magnificent birds appear by no means to be their tails, those long feathers growing, not from the *uropygium*, but all up their backs. A range of short brown stiff feathers, about six inches long, fixed in the *uropygium*, is the real tail, and serves as the fulcrum to prop the train, which is long and top-heavy when set on end. When the train is up, nothing appears of the bird before, but its head and neck; but this

would not be the case, were those long feathers fixed only in the rump, as may be seen by the turkeycock, when in a strutting attitude. By a strong muscular vibration, these birds can make the shafts of their long feathers clatter like the swords of a sword-dancer."

Of the varieties enumerated above, little need be said. The Japan (or rather the Japanned) breed, according to the reports of the Zoological Society, 1835, has originated in England. They state instances in which, in a breed of common white and pied, the Japanned suddenly appeared amongst them; also that from a flock of the common sort, the same variety arose, and again in a breed of common and pied, to the extinction of the previously existing breed.

The Javan and the Japanned should not be confounded together. Mr. Dixon has very clearly stated the differences, and also the mistakes that have been made on the subject. "Java and Japan are countries separated by many hundreds of miles of distance; yet Sir W. Jardine, in the 'Naturalist's Library,' gives the Pavo Javanensis as the same as the Japan Peacock. It is possible that both species may be indigenous in one or both of these respective countries; in which case, the specific names are not wrong, but only confused. I am not aware that any figure of the real Japanned bird has yet been published. Living Japan Peafowl are to be seen in London. In the Zoological Gardens they are labelled '*Java cristatus*,' as if they were only a variety of the common sort; but Mr. Hunt, the intelligent and experienced head keeper, is inclined to consider them as specifically distinct, an opinion which is also strongly maintained by the Messrs. Baker, the eminent dealers in rare birds. It is for naturalists to decide the point; but if the Japan breed be only a variety, it is a very marked and permanent one, not departing from its character for generation after generation."

We cannot leave this author yet, as he has closely

described the *Japan* bird, which, it will be seen, is very different from the Javan, to which we have before alluded, and which it is said that Lord Amherst, the predecessor of Lord Dalhousie in the government of India, first introduced into England. "The Japan Peacock is somewhat less in size than the common; the white patches of naked skin on the cheeks are smaller; the wings are blue-black, edged with metallic green, instead of being mottled like tortoise-shell; the imbricated feathers on the back are smaller and less conspicuous, and the whole colouring of the bird is of a darker tone. The hen, on the contrary, is very much lighter than the common sort, with a tendency to spangled, perhaps even ocellated plumage, all over her body, and she has scarcely any *glistening* feathers on the neck; her size is also inferior, and her proportions more slender."

The Earl of Derby, we are informed, has the Japan breed, which, in the wild species of India, has a cape of rusty-brown tarred with dark colour over the *shoulder* part of the wing-feathers, and slightly shaded, in some individuals, with green. This brown has become black in this country, and is, we suppose, the species Dr. Latham enumerates.

The *Pied* is generally white upon the wings, belly, and breast, but in the rest of the plumage showy and varied, as in the ordinary instances.

The *White* is, it can hardly be disputed now, merely an accidental variety; and by no means of any peculiar climate, and far less of northern latitudes.

Specimens of pure white are very rare, and therefore highly valued; and among the glittering plumes of the species best known to us, an individual in white drapery has a very pleasing effect—from force of contrast; but taken alone, it is immeasurably inferior in magnificence to the other. Her Majesty possesses one of these rare and elegant birds at Windsor.

A very curious case is related on the high testimony of John Hunter, in proof that females of some of the gallinaceous order, have the power of putting on the plumage of the male when past his services. A Peahen, which previously had chickens eight times, showed, after the moulting of her eleventh year, the feathers of a pied Peacock. During the process of moulting, the *train* first appeared; in the next year's moulting, she had similar feathers,—and again in the third year, when spurs made their appearance. She died next year, after this close approximation to metamorphosis. A portion of the framework of this remarkable hen may be seen in the Museum of the Royal College of Surgeons.

It is not until the second year that the difference of plumage in the sexes becomes apparent. The peafowl being of great longevity,—from twenty to twenty-five years,—is of corresponding slowness in attainment of maturity. In the third year, the tail of the cock develops itself; and when it assumes its gorgeous dignity, but not before, he is of suitable age for taking on him the management of three or four wives at the least.

In our climate the Peahen rarely lays more than five or six eggs (on alternate days), which instinct prompts her to deposit beneath some secluded hedge, and on the ground, yet concealed in weeds or long grass, from the prying glance and destructive beak and talons of the cock, who is an enemy to the rearing of the offspring, and cannot bear to have his wives occupied in maternal duties,—at least such is his reputation. If the first eggs be taken from her, she will often lay a second batch during the summer. Take the eggs as she lays them—instead of letting her sit—and after a while she will lay again. Sir Robert Heron, who studied the habits of these birds for many years, in a great measure exculpates them from the charge of severity to the young birds. He found individuals differing

as much in temper as human beings, some cocks assisting in the nurture of the young chicks, others attacking and destroying them—and hens sometimes acting kindly as step-mothers to the young of other parents, whether having any brood of their own or not—others devoid of the benevolent principle altogether. He had broods of half a dozen, in some instances, from hens only a year old, which is an unusually precocious age in this class of fowls, and but one chick from an old hen. Thus are the supposed laws and habits of these creatures modified by circumstances unknown to us, and unperceived by many.

We were for many years familiar with an individual peacock who never injured the young ones of the few hens which associated with him, nor did mischief in the gardens. Though he often perched upon the walls, we do not recollect any charges against him or them, for destroying buds or fruits; and of the small brood or two which every year made their appearance, some were dressed for the table on grand occasions, and considered quite equal, if not superior, in flavour to turkey poults. We are quite certain that no special care was taken to feed the hens when on their nest. They were generally left altogether to their own instincts for procuring what was necessary, and quite undisturbed in their brooding-places, which were in a thick plantation of evergreens. This large and gorgeous bird is quite out of place in a small inclosure, or where he may do mischief to the neighbouring gardens; but in a gentleman's park he is a truly appropriate ornament; and as peafowls of both sexes have strong local attachments, there is no danger of their leaving the locality where they have been reared and fed. They are sensible of kindness as other birds, and come to a window stool for the morning crumbs with regularity and tameness. But let them choose their own high roosting-places: in their desire for this, they rival the turkey, or rather desire a higher eleva-

tion; and if confined, are as helpless and powerless to defend themselves as any fowls. By an accident, we once lost a peacock which had been ours for years, and usually roosted on a tall ash-tree in a churchyard, and within a few yards of a high walled garden, into which he never trespassed. He was killed and torn into pieces by a ferocious sow, surrounded with a litter, into whose sty he had confidingly entered.

In him we lost a good barometer: his scream had prognosticated approaching rain with infallible accuracy; and though the screech of this bird is discordant, we somehow did not quarrel with it, especially as it so often gave us notice of changes in the weather, which were not so truly indicated by the more regular barometrical instrument.

The egg of the peahen is, in size and shape, like that of a goose, and of yellowish white, and sometimes marked with reddish spots. The most certain mother for hatching them is a turkey-hen, as this nurse will not fly up to a roost from the little ones before they are fledged and able to dispense with the warmth of the maternal breast; and the turkey can cover eleven or thirteen of the eggs. The companionship also which exists to a greater degree between peafowls and turkeys, and their similarity of instincts in some respects, render the turkey-hen by no means an unsuitable guardian for pea-chicks. The natural term of incubation for both species is nearly alike—that for the peahen being from twenty-seven to twenty-nine days, and for the turkey thirty-one days.

In three days after their birth, the chicks are able to reach a roost two or three feet high, another instance of providential design, to enable them to fly out of the reach of their natural enemies in their native lands, a faculty of which they have not been deprived by domestication, even though the exercise of it is not rendered necessary by their altered circumstances. They will mount to the ridges of the highest

farm-buildings, if there be subordinate ones from which they can gradually reach them.

The young ones are pretty, even at their birth, and tame enough to indicate that with right treatment, they might be rendered *almost* as familiar with man as turkeys or fowls; for we must make due allowance for the strong natural shyness of this bird, which more than two thousand years of association with mankind has not overcome; and we may thence infer never will effectually subdue. The same food too that is suitable to turkey chickens is the best for them,—curds, hard-boiled eggs, groats, crumbs of bread, and soon afterwards, insects and worms of all sorts, are their greatest luxuries. The new-hatched chicks, which require great protection from wet and cold, else they will die, are striped on the head and neck with alternate lines of dingy yellow and pale brown; their legs are of a dusky yellowish tinge. The under parts and breast are simply yellowish, of a colour something between gamboge and ochre. The first wing-feathers are pale cinnamon, barred with brown, like a young hawk's. The peahen has a very pleasing low kind of note, like that of a common hen who has young. At this time, she often puts herself into curious attitudes, walking about with the head stretched out as far as possible, erecting the neck-feathers, and looking as if in bewilderment.

This description applies to the chicks of the ordinary species reared in this country, and its two varieties, the white and the pied; for with the other varieties, we have *practically* no concern, though we have named them, and in one or two instances noticed their individual elegancies or gorgeous colourings.

The peacock is not the generous unselfish bird that the common cock unquestionably is; he has little of the true gallantry and self-devotion of Chanticleer; in fact, his

exquisitely beautiful exterior is his chief recommendation. In appetite, we acknowledge it with reluctance, he is thoroughly selfish, and even gluttonous; and instead of calling his dames about him to share the delicacy which may be thrown in his way, he swallows it himself, without the slightest sense of his unpoliteness. The Italian proverb invests him with two rather unenviable attributes—the voice of a devil, and the guts of a thief; for which, however, the third, his angelic plumage, more than compensates.

> If to his share great errors fall,
> Look at his *plumes*, and you'll forget them all.

With respect to these plumes, they say that his vanity is so excessively mortified at his plain appearance when moulting, that he keeps out of sight as much as possible, until his new glittering dress puts him in happy self-conceit again. During the process of moulting, invigorating food, such as wheat tailings, bean meal mixed with potatoes, and a little hemp-seed, or animal food, with oats or barley, should be abundantly given to peafowl: the latter grain is their favourite food, and generally the best for them.

Sometimes a peacock is kept without any female of his kind. This is a cruelty, as no creature is more apt to feel disconsolate and pine away from solitude, than this royal bird. Rather than be alone, he will associate with the turkey, as we have said: even ducks and drakes he will not despise, if he can meet no better company; and when without a bird for his companion, we have seen him engaged at play with a dog. We stood for at least half an hour, in a park last summer, observing the playful movements of these two animals; the dog tried to snap at the peacock's tail, and darted at it with great vivacity, but, as it appeared to our observation, without the least intention of doing mischief.

TURKEYS.

The Turkey.

Meleagris Gallipavo: Linnæus. *Gallus Indicus:* Fisch.

Notwithstanding the sanction of Aldrovandus and Belon, from whom Linnæus erroneously adopted the designation, the turkey has no more claim than the peacock to the patronymic Meleagris. Belon is supposed to have committed the original mistake, which is surprising, as he was a classical scholar, and ought to have known the Meleagris of the mythologists; and also, the fact that the turkey was not seen in Europe, until the Spaniards, after their discovery of America, brought it to their native country. The second appellative of *Gallipavo* in conjunction with the other is an effort of erudition to signify that this bird is of the "composite order" —if we may borrow this architectural term—representing in itself the three orders, the Guinea-fowl, the common cock, and the peacock.

Old Tusser has left some lines, not unsuitable as an inscription to the memorial we would raise in honour of this noble bird: they will serve to remind us of the "Christmas husbandrye fare" of the sixteenth century, if in other respects they are worthless.

> "Good bread and good drink, a good fire in the hall,
> Brown pudding and souse, and good mustard withall;
> Beef, mutton, and pork, shred pies of the best,
> Pig, veal, goose, and capon, and *turkey* well drest,
> Cheese, apples, and nuts, jolly carols to hear,
> As then in the country is counted good cheer."

Dindon, the French name by which the turkey-cock* is

* Properly the wild turkey; in Spanish, *Pavon de las Indias.*

designated, yet more obviously *Dinde,* the female appellation, designates the original locality of the turkey—*d'Inde,* from India. It is the Coq d'Inde of Buffon. The West Indies, whence it was brought about the year 1530* to Spain, by the adventurous navigators and merchants of that period, were called by them Western India. Why the name of turkey was given to this bird by the English is not so clear. It may have acquired it, as in the instance of the Turkish cock,† from having been brought to England by merchants whose principal commerce was with Turkey and other parts of the Levant, and who traded with the West Indies; or from the popular, though absurd notion, that the male bird, with his long, pendulous beard, grave and consequential deportment, and pompous bearing towards his females, resembled the Turk of high degree. No pacha, indeed, of three tails can be more proud and arrogant than the turkey, who displays but one.

When it was first brought into England is not accurately known. It is not named as a dish in the records of any royal or city feast in England before the reign of Henry VIII.; neither had it been introduced at a French table before the time of Henry's contemporary, Francis I. There is, indeed, positive testimony of the importation of this noble bird from America, as may be read in the "British Zoology." Buffon mentions an opinion advanced, that the turkey was a mongrel, between the peacock and the common fowl; but he refutes it, and expresses his conviction that it was of American origin, and unknown in a state of nature throughout Asia, the source of all the gallinaceous tribe.

According to the "Norfolk Archæology," an ancestor of

* In 1526, Oviedo, governor of Hispaniola, published a Natural History of the Indies, in which the turkey is described as a kind of peacock abounding in New Spain, introduced into the islands, and domesticated by the Christian colonists.

† Noticed in the description of the Bantams.

Sir George Strickland, Bart., first brought it into England; and the crest* of this family is a turkey-cock in his pride "proper." Norfolk is pre-eminent for the breed of turkeys, whether the earliest imported were first seen there or not. They multiplied, however, in England, though not at the rate of our modern Shanghaes, and with due care not to diminish the stock extravagantly; for in 1541, Archbishop Cranmer prohibited the appearance at table on state festivals of more than one dish of turkey-cocks: the female was too precious to be cooked at that period. Fourteen years later, two turkeys, and two turkey poults were served up at a grand Law dinner. Twenty years afterwards, the turkey became a Christmas dish with the farmer.

The *Wild Turkey* is a native of North America, and ranges from Canada to Mexico, and throughout the vast forests that extend thence to the north-west, along the courses of the Mississippi and the Missouri, and to the Rocky Mountains. This magnificent bird affords food and sport periodically to the fowler; but as civilization advances, and men multiply, the wild turkeys recede and decrease, and will, at no very distant period, become extinct. From the interesting work on American Ornithology, by the Prince of Canino, son of Lucien Bonaparte, we learn that the wild turkeys flock together in October: after they have been feeding abundantly on maize, acorns, nuts, and occasionally a young frog, they direct their course to the fertile plains through which the Ohio and other mighty rivers wend their majestic way: they there disperse in small flocks, eating the fruits of the cultivated lands, and making near approaches to human habitations; and if hungry, during the winter, becoming so bold and familiar as to enter the very farm-yards and offices in search of food: the shooting of them continues during the winter. Early in

* The grant of arms was given to William Strickland by Edward VI., about 1550.

spring, the hens separate from the cocks, and appear to shun them, and roost apart, though the males follow them, and loudly express their vexation, or their love it may be, in that soft strain peculiar to the turkey-cock, expressed by the word *gobble*. Jealousies and contests among arrogant and quarrelsome males occur at this season; and the conquering hero is, perhaps, rewarded for his prowess in gaining the affections of two, three, or perhaps more females, who roost near him, and continue their attachment to him until the laying season arrives, when, poor creatures, they feel the sad necessity of keeping out of his way entirely, and concealing their eggs under withered leaves, or as they best can, lest he should smash them, until they have laid enough for a hatch, when they sit down in secrecy, and remain concealed until their brood is brought forth. The graphic description is too long for a complete extract in our limited space; but we cannot deny ourselves the pleasure of giving some portions of it.

The males (or gobblers) roam about in parties of from ten to a hundred, feeding together; while the females either associate together in parties also, with their young about two-thirds grown, or separate from the rest, and stray apart with their respective poults. They are obliged to dissociate themselves altogether from the cocks, which have an irresistible desire to knock their offspring on the head with their beaks. None of them use their wings at this period, unless the keen pursuit of a hunter, or the obstruction of a river on their line of march, obliges them to fly. To do this effectually, they take advantage of the highest points over the river, and after a deliberation of perhaps a day or two—no doubt to encourage and discipline the young birds, the male birds vociferously gobbling all the time—they dart across from some trees, following the signal-note of a leader, and alight upon the opposite shore; and, contrary to what might be expected,

the big fat birds fly better than the others, whose feeble wings often fail in the flight; so that the poor weak birds, dropping short in the river, have to swim for their lives, which instinct teaches them to do, by spreading their tails for support behind, closing their wings, stretching out the neck, and striking out with the feet.

M. Audubon thus relates a pleasing circumstance relating to the wild species:—"I once witnessed the hatching of a brood of turkeys, as I watched with the purpose of securing them together with the parent. I concealed myself on the ground within a very few feet, and saw her raise herself half the length of her legs, look anxiously upon the eggs, cluck cheerfully, remove each half-empty shell, and with her bill caress and dry the young birds that already stood tottering and attempting to make their way out of the nest. Yes, I have seen this, and have left the mother and her young to better care than mine could have proved—to the care of their Creator and mine. I have seen them all emerge from the shell; and in a few minutes afterwards tumble, roll, and push each other forward with astonishing and inscrutable instinct."

Of the wild turkey there are three species, the *Meleagris Gallipavo* (from which our domesticated turkey has sprung), so common in the forests of America; the *Meleagris ocellata,* or Honduras Turkey, which is only known to us by the descriptions of those who have viewed it within the glass case of a museum; and the *Brush* Turkey.

The adult male of the former sort needs but concise description. The plumage is nearly of uniform brown, of more delicate shade in the principal feathers: bronze, violet, and purple are reflected, according to the light in which they may be seen. The wings are concave and rounded, and the breadth, according to the Prince of Musignano, between the extreme points of the wings when

extended, is five feet; the length of the bird is about four feet, and it stands high, on stout reddish legs (the scales of which are margined with black), terminated by dusky feet; blunt spurs, about an inch long.

The female Wild Turkey.—Prevailing hue of the plumage dusky grey, each feather having a metallic band, duller than in the male; then a blackish band, then, and lastly, a greyish fringe. The blackish band is almost obliterated on the neck-feathers and under-surface. The whole plumage is more sombre than that of the male; there is less white on the primaries, and there are no bands on the secondaries. The colour of the tail is much as it is in the male.*

These are truly magnificent birds, and their weights are greater than the domesticated kinds attain, unless with rare exceptions. Reports, apparently unexaggerated, have stated them as reaching forty pounds, and thirty pounds not uncommonly. M. Audubon, however, gives the average at from fifteen to eighteen pounds.

One reason why our domestic sorts weigh so much less is, that we, preferring young birds to old ones, do not allow them to live to the age when great weight might be expected. The turkey does not attain its full size until it has lived four or five years, and few persons keep any beyond a year, except as breeding stock; and we suppose that even an American sportsman would rather bag a young bird of fifteen pounds weight, than its great-grandfather—it might be—of forty pounds.

The second wild sort is—

The Honduras Turkey (taken in Honduras Bay).—The *Meleagris ocellata,* of which there is a beautiful engraving in the edition of Cuvier to which we have so often had occasion to refer, is nearly as showy as the peacock in brilliancy of colours, and especially in the circles of sapphire colour,

* "Penny Cyclopædia."

surrounded with gold and ruby, which decorate the tail. With its blue undulated feathers on the back, "margined near the ends with black, and fringed at the tops with gilded brown;" with its glossy copper-coloured shoulders, wings variegated with black and white; "tail-feathers marbled and barred blackish and grey, with the ends gilded brown," and the extremities of the expanded fan embellished with eyes, it is second only in gorgeousness to the peacock.*

The *Brush Turkey* (*Talegalla*, Latham) is a wild sort, which was brought from Australia, although a native also of New Guinea and the adjacent islands of the Indian Archipelago. The first specimens were brought to England from Sydney, in 1849, for the Zoological Society, Regent's Park, and are thus briefly noticed in "The Guide to the Gardens:"—"They [and others of a group] are remarkable for the great strength of their feet. The peculiar function to which this structure is directed, is discernible in the history of their reproduction. Instead of making a nest, they scratch together enormous mounds of leaves and earth, in which they bury their eggs, to be matured by the heat of fermentation. As soon as the chicken leaves the shell, it excavates a way to the light by means of its strong and well-developed feet; and then, it seems, the mother bird, guided by unerring instinct to await this moment, receives her young, and commences the actual duties of parental care."

When we saw a pair of these very small and extremely wild birds, late in September, the moulting had been completed, and we had a satisfactory view of their general appearance. The cock has a reddish head, very small, and without appendage or ornament of any sort, as is the case in the whole tribe of turkeys, wild and tame. The carun-

* One specimen was formerly in Mr. Bullock's celebrated collection, and afterwards purchased for the Paris Museum, in the Jardin des Plantes, where it now is. There is also one in the British Museum.

cles on the neck of the Brush turkey are, in the cock, deep orange-yellow, paler and smaller in the hen; body plumage of both smoky black; breast-feathers pencilled with white. They are very different from the ordinary turkey, and are rather light and elegant in their carriage: they do not bear our winters, but require warmth.

The hen is about a fifth smaller than the cock, and more of a dusky colour, but altogether much resembling the male bird.

So wild and fierce is the hen (now five or six years old), that she continues to break the few eggs she lays; so that the propagation of this singular breed has not yet been accomplished in the aviary.

We have few varieties of the *domestic turkey*, and they have no marked distinctions except in colour.

The head of the male bird is especially ugly, with bluish skin extending down the neck, and spongy and scarlet fleshy excrescences, called gills in common phrase, hanging down from the neck; and the odd-looking red muscular membrane which issues from the bill, above the nostrils, and is known provincially as the "snuffle," and which falls, when inflated through any exciting cause, some inches below the beak, which it then entirely covers, is by no means a pleasing appendage. When the "snuffle" falls, swollen and elongated, the neck and back feathers rise up, the tail expanding into the form of a fan, and the wings, as they open out, drooping to the ground; the gills assume a more angry, bloodlike appearance, when he is thus caricaturing vanity, and reminding us of the dramatic introduction:—

"Here he comes, swelling like a great turkey-cock!"

While he is thus self-satisfied, a muffled sound, intended, it may be, for an amorous sigh, proceeds from the "snuffle," that seems burlesquing the elephant's proboscis, and, becoming

more audible, rises to a prolonged humming sound, which may be increased to a shrill cry, repeated *ad libitum*, either by abusing him, for his unpleasant performance, or by uttering sounds accordant with his own. Buffon, with whose ideas I have been making free in these remarks, draws attention to the remarkable fact, that the curious membrane—it serves the purpose of a bagpipe—which allows the turkey-cock to drone out his music in this odd way, and which unfolds and swells under the influence of any passion, has the same appearance after death. The different inflections of tones uttered by the turkey, according to age, sex, and the passions it desires to excite, did not escape the notice of this critical observer. He did not give credit, however, to the imputation cast upon the male turkey, that it will, under peculiar circumstances, not only form conjugal attachment to the peahen—which is highly probable—but with a common hen.

The instances of such unnatural alliances are so extremely rare, that we should not have introduced the subject at all, but from conviction that Buffon's incredulity might have been overcome by facts, of the nature of the one which we now communicate.

We vouch for the strict veracity of the individual who stated to us the following particulars of a hybrid turkey. A few hours after the hatching of a brood of common chickens, some peculiar feathers were observed round the throat of one of them, then a small fleshy excrescence about the face, and the head was bare. The hen, it was soon observed, refused to suffer this chick to nestle with the others under her wing, or, at most, allowed it shelter but for its head and neck, and seldom showed even such limited kindness to it. As it grew up, it did not feed with the other members of the brood, but when they had left their food, crept out from some low brushwood and picked up the remaining crumbs. When six months old, it was as large in the body as a common fowl,

but its long neck, oval head, and gigantic legs, rendered it altogether an unsightly creature. The servants, however, became attached to it, either from pure compassion, or from the oddity of its appearance, and gave it the name of Fitz-turkey, to which unquestionably it had a right, though it came out of a fowl's egg, differing in no outward appearance from that of a common hen. Poor Fitz was snapped up in a coppice on a day's pheasant-shooting by a setter, and laid dead at the keeper's feet.

The domesticated varieties of the turkey may be included in three classes,—the American, the Black or Norfolk, and the Cambridge.

The *American Turkey*, now domesticated in this country, is the finest of the whole family, in respect of plumage, size, and hardihood. Theirs is "fresh blood from the primæval forests," and they have game-like self-dependent habits, not having yet lost the active disposition, arising from former necessity, of searching for their food, and exerting themselves in a manner of which our stupid, listless, lazy, and long-naturalized and domesticated turkeys are incapable,—at least until advanced years may sharpen their wits.

The brilliancy of the rich plumage of these Americans is strikingly beautiful, and they enjoy healthiness and vigour, which render them a valuable importation. As to the length of time during which the progenitors of the present generation may have been domesticated in America, we, individually, have no knowledge whatever; nor of the imperfectly domesticated Americans which were kept by amateurs in England some thirty or forty years ago; but the following report of a gentleman who had them, and who sent some specimens to Mr. Dixon, shows the value attached to these birds many years ago in the highest quarter. "I have always believed these birds to be descendants of the true wild breed brought immediately from America. The owners of them

have constantly laid claim to this; in proof whereof I may mention an anecdote which occurred some years since. At that time, Earl Powys was reputed to be the only possessor of these, and I believe he imported them. On one occasion he presented George IV. with a fine black charger, which was graciously received; but the King is said to have remarked to those in his confidence, that a horse was of no use to him, as he could not ride, but that Lord Powys did possess something which he should much value. This was reported to his lordship, and after some difficulty it was found out that a pair of American turkeys would be most acceptable, and they were sent.

"The late Lord Leicester was also said to possess the wild breed; and I well remember his telling my father they were so, and remarking that they got their food so much more readily than the tame kinds. I originally had my breed from Lord Leicester, and have since crossed them with Earl Powys's. The two breeds differ in the latter having the wing-feathers, or rather quills, barred with white, whereas Lord Leicester's are wholly dark. Both cocks and hens are beautifully metallic, far more so than any breed that I know. The shape of the hen also is more elongated, and there is a sprightliness about the head, which is also better shaped."

It has been conjectured—we think erroneously, that delicate as turkeys are supposed to be, they might be naturalized like pheasants, to our woods and coppices. They are too helpless and stupid to shift for themselves when very young, and would fall a certain prey to foxes,—though an isolated case or two may appear to indicate the practicability of rendering them game birds.

In the "Sporting Magazine," Aug. 1824, there is a statement tending to prove this. A turkey-cock and two hens, all two years old, rambled from a gentleman's poultry-yard into an extensive wood, and were not traced. It was supposed

that Reynard had feasted upon them, or that they had been stolen. Two years afterwards, the owner, when riding through a large thicket covert, about half a mile from the spot where the missing ones had been last seen, was surprised by the sudden appearance of a hen turkey, which ran off in a state of wild alarm. From her colour, the gentleman who saw her, at once inferred that she was one of the hens which had eloped more than two years before. She was captured; the other hen, who was discovered to have a young brood, was also recovered, but broke away to her poults, and remained, at the period of the report, in the wood with the cock bird and the young ones: the other had been hatching. The fact was established, that both hens had survived two winters in the wood without any other food or shelter than that which nature had provided for them.

The *Norfolk Turkey* is well known, and the black sort is deservedly prized. But the Norfolk breeders distinguish between what they call the *real* Norfolk, and the Dutch copper-coloured and Cambridge breeds, which, according to Mr. Dixon, himself a Norfolk man, are often passed for true Norfolks. The distinction he draws between the true Norfolk and the Cambridge, which resemble them, is, that the former are entirely black, except that the extremities of the tail and some of the back-feathers have a shade of rusty brown, whereas the *black* Cambridge have a bluish and very glossy tinge. The chicks have a decidedly different appearance, those of the Norfolk being black, with occasionally white patches about the head; those of the other being mottled all over with brownish grey, and also differing in being taller and less robust.

The incidents which we are about to relate are not inappropriate episodes in this historical sketch of the turkey. A Norfolk black turkey, which weighed thirty-six pounds when he was fourteen years of age (and whose father had

been exhibited as a show, from having weighed forty-two pounds), was very daring and sanguinary to his own kind in particular; he killed his young progeny whenever he could get at them, and more than once was condemned by his keeper to march about with some of the innocents which he had murdered hanging round his neck. His mode of despatching them was by cracking their skulls; he then gobbled them up, if he had the opportunity. He was suspected of having put to death and devoured a young puppy dog. He would not allow any stranger to approach him; and the boldness and animosity with which he would attack a tramp or beggarman in particular, with the instinctive discrimination of the canine race, was notorious in the neighbourhood, and proved at last to be the occasion of his death, a tramp having killed him in self-defence. This bird had been kept at a sort of shooting-lodge, where he once was the occasion of a singular scene. The breakfast-table had been laid in a small parlour close to the front door, for two young gentlemen previously to their day's sport; one of them, not well acquainted with the cock, on coming into the room, found that he had walked in with the dogs, had swallowed the eggs, and was in the act of eating a buttered muffin, and also putting his bill into a pot of raspberry jam. The young gentleman thought he had nothing to do but to kick the intruder out; but on his attempting to approach him, the bird became so furious and showed such fight, that the other was obliged to protect himself from his assault with the poker, with which he was making passes from an angle of the room at his assailant, when his elder brother came in, on hearing the hubbub and cries for assistance. Being familiar with the cock, and knowing the mode of mastering him, he drove him out. Like most of the adult males of the turkey family, his choler was excited by the appearance of a red dress. On one occasion he sprung upon the shoulders of a

lady who wore a scarlet scarf, and terrified her into hysterics. The Cambridge, which has broken into so many combinations of grey, reddish brown, black and white, is the most common kind.

The *pure White Turkeys* are very elegant creatures, though the most tender of all to rear. It is well known that most birds, wild as well as tame, occasionally produce perfectly white individuals of more delicate constitutions than their parents. We cannot doubt that the selection and pairing of such is the way in which the breed of white turkeys has been established and kept up. However, with all care, they will now and then produce speckled birds, and so show a tendency to return to the normal plumage. It is remarkable, that in specimens which are else snow-white, the tuft on the breast remains coal-black, looking in the hens like a tail of ermine, and so showing as a great ornament. The head and caruncles on the neck of the male are, when excited, of the same blue and scarlet hues. Thus the creature with small portions of black, blue, and scarlet, relieving his showy and trembling flakes of plumage, is truly beautiful; and some few farmers keep them, in spite of the disadvantages attending them. A merit is, that they dress most temptingly white for the market; but they are unsuited for miry, swampy, or clayey situations, and look and thrive best when they have a range of clean, short pasture on a light or chalky sub-soil. In France, the white turkey is preferred, as the more hardy and robust kind; the cocks being larger, and the hens better breeders than the darker kinds, and being better flavoured. The climate there is, however, very different from ours.

Instances of the evanescence of white plumage, after a time, and also of the reappearance of white in the pied, spangled, or speckled modifications, though it may not have been exhibited at all in some intervening generations, are not unusual.

One of our neighbours has two diminutive spangled turkey poults, which attest the truth of the preceding remark, and also furnish proof of the fatal effects of breeding too long and too closely in the same family. These spangled female birds—the most remarkable we have seen in plumage—which were hatched late in the last season, had for their parents birds of the black Cambridge sort. These parents show no white, nor any indication of degeneracy, yet their two last broods have manifested extreme failure.

The family history is as follows:—They have been several years established in the poultry-yard, and some of their ancestors were perfectly white, though we cannot trace the gradations or crossings by which the white disappeared, until in the persons of the two spangled specimens under notice. This family has had no infusion of fresh blood, and the parent birds of the spangled poults are mother and son,—the latter in his third year, the other in her fifth. Last year the hen hatched two broods. In the earlier one sixteen were hatched, in the later thirteen. Of the former, five were born blind; all of which died prematurely except three, and these were puny and very diminutive even to the end. Of the second brood, five only lived to grow up, and they did not attain the usual size; three were born blind. The cock was so much ashamed of them, that he pecked open the head of one; two were served up at table: the remaining couple, pretty spangled ones, are in the coop undergoing a very imperfect fattening process, and will not when fat weigh more than half the average weight of good specimens of the same sort. The parent hen, mated with a male not related to her, will probably have a good brood or two this year. The lady to whom the parent birds belong, seeing them as perfect in all appearance as any of the preceding generations of the same family, and having a sort of affection for a race which had been so long in her poultry-yard, could not be

persuaded until now that she ought in some degree to have changed her stock long since.

Experience is our instructress in such matters. Now every possible cause for the failure of the poults, has been assigned by the wise farmers' wives around, except the true one,—the breeding in-and-in! One dame says she never keeps a turkey-cock longer than a year, and that the failure above recited has been the result of keeping the parent birds too long. Here is a proof of the utter ignorance on the subject of poultry management, and of the need of a little judicious reading on the subject. The turkey is not in his prime until his fourth or fifth year;* he is growing to that time; therefore, at the immature age at which he generally is a parent, the offspring is not likely to be so vigorous, as if they descended from a sire of matured age. That is a false economy which leads the breeder of poultry to dispose of their male stock bird to the higgler or poulterer, when it is but two years old or less.

Though the flesh of fowls, when old, is by no means tender, that of turkeys has not this defective quality. If cleverly treated by the cook, a four-year-old turkey will not prove to be tough; if unskilfully managed, however, an old bird on the table is an object more to be gazed at, admired for its size and fulness, than enjoyed. A young hen bird is a very capital dish, and therefore to be killed as a matter of course. We are objecting only to the error of depriving stock birds of life at the period when they are only beginning to be most effective for multiplying their kind.

As one male is sufficient for several female turkeys (unless for breeding prize birds, or a very select stock), the Irish peasantry and petty farmers, who rear poultry in considerable numbers, seldom keep more than one, or at most two

* Mr. Nolan says that the plumage is not perfected before the *seventh* year.

female birds, as they are sure of being allowed by some accommodating neighbour on a larger scale of poultry operations, to send their lonely birds on a morning visit once or twice in the season to the male bird kept in the larger establishment. This is sufficient for the fecundation of all the eggs that may be laid by a hen for each hatch.

She usually sits twice in the year, after laying from a dozen to fifteen or more eggs, on alternate days, or two days in succession, with the interval of one day afterwards, before each brooding. She commences her first laying in March; and if a second early laying is desired, after she has hatched her brood, it is economical to transfer the chicks immediately after they leave the shell to another turkey-hen which had begun to incubate contemporaneously with her, and will now take willing charge of the two young families. This, however, cannot be viewed as a benevolent proceeding; and much less so if the mother be deprived of her offspring, and the consequent pleasure of rearing them, for the purpose of putting a fresh set of eggs under her, which she will steadily hatch for three or more than four weeks more. In this case, however, fowls' eggs are usually given, from merciful consideration to abridge the period of incubation from thirty-one to twenty-one days.

The turkey's egg is of a dark cream-colour, and about four ounces in weight. According to the size of the hen, the season, and the average local temperature, the number of eggs for each hatch may be stated at from eleven to seventeen: thirteen is a fair average number.

According as the hen lays them, her eggs should be immediately removed, and kept apart until the time for setting them; else the awkward bird might break them in the nest, as she goes in or out of it. While she is incubating, the cock bird should not be permitted to approach it, lest he should mischievously break the eggs or disturb the hen; and

as she is very timid, strangers should not meddle with her. The familiar hand only should be employed to feed her.

No young birds more require the assistance of a human friend to supply their early wants than those of the turkey, which is decidedly a silly and stupid creature in many respects, and quite incapable of teaching them to feed, or of giving any of those early lessons which fowls of quick apprehension so sagaciously impart. Even when the poults are old enough to march over a field of stubble, they have not sufficient sense to pick up the grains which lie scattered around them: their mother steps along in a lack-a-daisical manner, and she and they, until they are actually stopped in their progress, and thus made to examine the ground beneath their feet, will often leave the scattered food untouched; not from want of appetite, but from such dulness of perception as prevents them from seeing it on the ground. This deficiency of the distinguishing faculty, which is so possessed by animals left by nature to their own instincts for protection, renders it necessary to restrain turkeys from wandering over ground in which poisonous herbs, such as henbane, exist: this has been long known as destructive to them. They are so fond of fresh green leaves, that they will eat poisonous herbage as readily as the most wholesome. Even green vetches, according to Buffon (the ripe seeds more probably), are injurious to turkeys. We have not tried experiments in this respect, but we altogether doubt that green vetches can injure birds naturally fond of such herbage: the havoc they can make in a field of young wheat gives strong proof of their graminivorous appetite; and the avidity with which they rush on cabbages or Swedish turnips is surprising.*

* A marauding party of Cochin fowls will commit almost equally destructive ravages on young wheat-plants, and devour any tender grass with the appetite of a goose, which is still more keen for such green food than even that of the turkey.

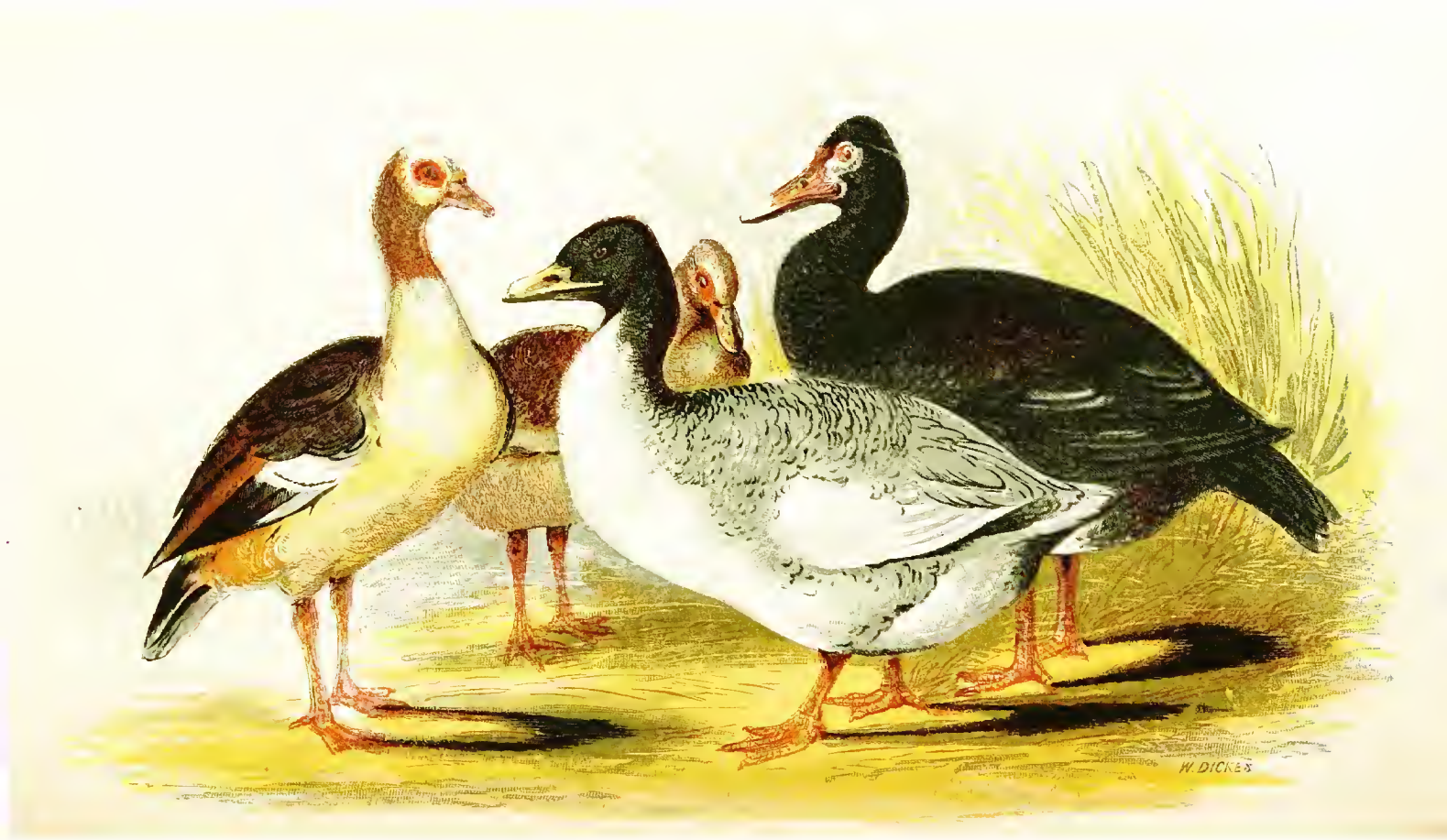
Tonic and stomachic plants, such as wild endive, fennel, lettuce, parsley, and nettles, have been long prescribed for them; and aromatic herbs generally are good for them.

The power of digestion which the turkey possesses is such, that it has been in some instances *crammed* with unbroken walnuts, and found to fatten on them. Acorns and beech-nuts are very good for them, in the latter part of autumn, by which time they may have sense enough to discover them in plantations and eat them. In the autumn they are yet so incapable of making efforts for providing their own subsistence, that they would pass through a field of ripe peas without an attempt to open a single pod for themselves. Like an indolent Creole or Asiatic lady, they would wait listlessly until the food was presented to their mouths.

It is remarkable that turkeys, which are undoubtedly very delicate at first, and incapable of enduring rainy weather, are reared much more extensively, and with more prospect of success, throughout a great part of Ireland than in the much drier climate of England. The colder temperature in the latter country in certain seasons of the year may partly account for this; but the paucity in England of that humble class of rural occupiers, who find poultry-rearing worth their attention, is, doubtless, the principal reason why birds which require much care and attention are not bred so extensively in England. We were once in the practice of purchasing twenty-five couples of turkey poults as our annual supply for domestic consumption, allowing a couple weekly for six months, at the low rate of from three to four shillings a couple, at the Michaelmas fair of Ballyhack, in the county of Wexford. Even at the period to which we refer, the same birds would have been worth double that price in any part of England. We shall not analyze the causes of so great discrepancy in the abundance and value of the turkey in the two kingdoms, in former days; as the facilities of

communication between the great markets of England and the poultry-breeders of Ireland have caused a nearer approximation of prices.

The pip is a frequent ailment of young turkeys. This and other maladies, common or peculiar to them, will be noticed in their proper place.



EGYPTIAN GEESE. COMMON GOOSE. SPURWING GOOSE.

Geese.

Anser: Cuvier.

Linnæus chose to consider the form of the bill and tongue as the character of the *Anatidæ;* and as the goose and the duck are similar in this respect, and also in having four toes, three before and one behind, the middle being the longest, he, and Latham and Temminck, adopting his generic arrangement, placed both these families of the natatorial order in the same genus.

But the *Anatidæ* differ from the *Anseres* in so many obvious particulars, that they have been judiciously separated in genera. The goose is larger than the duck, has much longer legs, and these are placed more in the middle of the body, to keep it in equilibrio,—advantages which enable it to walk in a much less waddling fashion; nay, it has a grave and dignified deportment in comparison; and though not possessing the beautiful plumage of many species of the duck, it is a finer bird altogether. There are no fewer than twenty-eight species, at least, of wild geese; and to trace these through the different regions of the globe, would indeed be a wild-goose chase; and if the Linnæan classification were adopted, and the geese and ducks were to be of one family, there would be more than a hundred and thirty species, wild and tame, included in it.* Some of

* We use expressions regarding the ducks and the geese which indicate that we do not practically consider them as congeners; for instance, the meaning conveyed by the words "my darling duck," is very different from that intimated by "what a goose you are!" The appellation of "duck" is one of

the wild sorts, however, must be described here. We begin with

The Grey-lag.—Popular opinion has declared that this is the type and source of our domesticated sorts; but some naturalists are doubtful of this; and others disbelieve it altogether. Mr. Yarrell says only that the grey-legged goose is *considered* to be the origin from which our valuable domesticated race is derived; and Jenyns,* more dubiously, "such a circumstance is *improbable*, from the well-known fact that the common gander, after attaining a certain age, is invariably white."

The goose is a bird of such extremely remote antiquity, that we must be content to remain in incertitude on this ancestral point, as it affects the geese of our poultry-yards, and to evade all discussion respecting the probabilities that some other wild tribes have had share in the production of our established stock.

The Grey-lag is the common well-known wild goose, and easily recognised by its marks; the upper body-plumage ash-coloured; breast and belly dusky white; bill thick at the base, narrow towards the end, and saffron-coloured, with the nail white; head and neck ashy-brown; upper body-plumage dark brown, with shadings of ashy grey, which become lighter towards the margins; lesser coverts tipped with white; the shafts of the quill-feathers white; the webs grey, and the points black; secondaries black, edged with white; breast and belly crossed and clouded with dusky ash on a whitish ground; tail-coverts and vent perfectly white; middle tail-feathers dusky, and tipped with white, the

endearment; that of "goose," expressive of our opinion that folly distinguishes the individual to whom the epithet is applied. Yet the goose is no fool, and has far more cleanly, decent, and temperate habits than the duck generally, who is a notorious scavenger of filthy garbage, to whom "a rat three parts rotten is a feast;" but "fine feathers make fine birds" in popular estimation.

* "Manual of Vertebrate Animals."

adjoining ones more deeply tipped, and the exterior feathers nearly white; legs pale red.*

The flight of wild geese is curious; they generally move in two lines, forming an acute angle in advance, thus presenting a wedge to the resistance of the air; or, much less frequently, in single files. A senior gander leads the flying squadron, and as he becomes fatigued from clearing a passage through the air, another takes his place, while he falls to the rear, where the opposition of the air is weakest.

The Bernicle Goose—Bernicla, Willughby; *La Bernache,* Buffon,—is the wild sort which frequents western parts of England and the eastern of Ireland; whereas the *Brent* † sub-variety, which is another very small sort of the wild kinds from the northern latitudes, rather frequents the north-eastern parts of Great Britain. The Hollanders first made us acquainted with the characters and habits of this tribe, which they discovered in their earlier voyages to Greenland. Cuvier did not consider them geese properly so called; but they are decidedly a species of the wild goose, and not of the duck. Though it is lighter and more slender in form and more slim in the bill than the goose generally, and is longer on the legs, still it has the deportment, general proportions, and plumage of one. The colour and style of the plumage suggested the name of *Religieuse* or *Nonnette* to Belon, who fancied he saw the black *domino,* rounded at the bottom,

* See Nolan's "Ornamental, Aquatic, and Domestic Fowls," &c.

† It has all the habits of the Bernicle, and has been confounded with it; yet it is smaller, and from the following description by Mr. Nolan, different from it:—"It is much smaller than the Bernicle goose, stands low on the tarsi; the head, neck, and lower part of the breast are dull black; on the sides of the neck an interrupted patch of white; back, scapulars, rump, and under parts, anterior to the legs, clove-brown, patch below, each feather having the tips and margins of a lighter shade; flank feathers tipped with white; vent, upper and under tail-coverts (the latter exceeding the tail in length) pure white; tail clove-brown; secondaries blackish brown; hill, legs and feet black. The sexes do not vary much in plumage."

covering the neck, back, and bosom; a rich mantle of black and grey, fringed with white, marbled with blue, is the general *upper* plumage; the under is white.

A most ridiculous notion prevailed formerly, that this bird was bred in *trees* in the Norwegian woods, and in the Orkneys; and in the wreck timber which floats on the ocean: they believed that certain buds from those trees contained the embryo of the Bernicle, which, in consequence, was named the *Anser arboreus*. Aldrovandi was told with an oath, by a grave and learned doctor, that he saw and held in his hands the little Bernicles while they fell as yet unformed from the decayed wood. From the holes perforated by worms or some sort of razor-fish, in timber long at sea, there issue, as we have frequently seen on the Wexford coast, bivalve shells adhering to the wood or to the sea-weed around it; and these shells undoubtedly have within them very odd-looking animals, not very fish-like. These are provincially called Bernicle fish, and still believed, however absurd the notion, by the fishermen, to be the embryo birds, which, in due time, are to emerge like the chrysalis, and fly away. This metamorphosis is popularly held to be in the natural course of Bernicle generation.

Large flocks in former years used to arrive at Wexford (as at Lough Foyle, in Buffon's time), in search of the *Zostera marina*, which abounded on the mud banks (submerged by the tidal waters); but of late years very few comparatively flock there, owing to two causes, which inhospitably and improvidently forbid their progress up the estuary. Fowlers go outside the harbour to shoot them at the beginning of the season, before they can establish themselves on the feeding-grounds inside; and the increase of punts, armed with swivel guns, scares them away when they do come in. The flavour is like that of the wild duck, but *higher* and more fishy; but in a domesticated state this would cease to be com-

plained of. It is remarkable, that though the mallard, teal, and widgeon feed on the young and tender grass of the *Zostera marina,* the Bernicle only eats the root, which it pulls up.

Some broods of them have been reared—the descendants of captive parents—as ornamental birds for ponds; and both old and young ones have been found very docile in their transition state towards domestication.

The Canadian Goose—Anser Canadensis, Linnæus.—Cuvier was undecided whether this were properly a goose or a swan —it seems to be a connecting link between both sorts: from the length and curvature of its neck it is swan-like, but in its general contour it is a goose.

The male and female have perfectly similar plumage; the description of either sex, therefore, serves for that of both: the head and neck black, excepting a patch of white (compared by Buffon to a cravat)* on the upper part of the throat, and extending towards the eye; lower part of the neck and breast ashy white; back and wing-coverts dark brown; extremities whitish grey; primaries black; quill, tail, and rump-feathers black; under-plumage ashy white; bill and feet lead-colour.

They are of great value, even as birds of passage, to the inhabitants of North America, who shoot them in large numbers on the rivers and lakes during their migrations from August to October. The servants of the Hudson's Bay Company, in favourable years, kill thousands of them, and barrel them up for use. In the frozen state, the flesh keeps perfectly fresh and good, and is, therefore, a valuable winter dish. Wounded birds are made prisoners, and these frequently pair with the domestic grey goose; and they generate a large-sized and good bird. The Canadian geese, when in

* *L'oie à Cravatte.* It was an associate of the swan, or *Anser cygnus;* but not the Swan goose, kept at Versailles and Chantilly.

good condition, weigh about twelve pounds, and yield half a pound of feathers; so that a successful fowler is well paid for his expenditure of powder and shot.

It is easy to domesticate the progeny of these birds; and it may be well to have such a good wild stock as a resort for fresh blood, as the grey-lags are rapidly decreasing. The newly-hatched goslings have the dark colours of the adult species: back and tail brown, and ash-coloured belly; and the cravat.

"The fine proportions of this stately foreigner, its voice, and flavour of its flesh, are strong inducements for us all to hope that ere long it will become a naturalized bird throughout the whole of Great Britain."

There is, however, by no means, unanimous approval of the quality of the flesh; the rank and fishy flavour which many persons have imputed to it, must be entirely owing to the qualities of the feeding-grounds where these aquatics, in the wild state, obtain their nutrition.

The Bean Goose—Anas segetum, Latham.—This is the small species, which, weighing from five to seven pounds, arrives on the north-east coast of England, from their breeding-places in the north of Europe and the islands north of Scotland, about the first of October, when the commencing severity of winter prompts them to come in search of the grain and green crops which our milder latitudes afford at that season. They remain here until spring. The point of the bill is comparatively small and short; in form and colour it is something like the bean; and this resemblance is the origin of the name given to this species, which is also called the Small Grey Goose. Its distinctions are,—head, neck, and wing-coverts brownish, with a tinge of grey; under wing-coverts light grey, centre edged with white; tail-coverts white; primaries and secondaries grey, tipped with black; wings, when closed, reaching beyond the tail; feet and legs

saffron-colour; claws black. They breed occasionally in some of the northern counties of Great Britain, producing small broods of seven or eight, which, if caught, are domesticated without much difficulty. If the broods be not captured, they unite towards winter in flocks.

The China Goose—Anas cygnoides, Cuvier; *Swan Goose*, Stephen.—This species has, says Mr. Dixon, names enough to fill a menagerie—China Goose, Knob Goose, Swan Goose, Chinese Swan (*Cygnus Sinensis:* Cuvier), Guinea Goose, Spanish Goose, Polish Goose, Muscovy Goose, and probably more.* However distinguished by appellative, it is domesticated, and kept in numerous poultry-yards, where it breeds with the ordinary geese. Its general description is thus concisely given :—"Plumage whitish grey, with a grey-brown mantle: the male may be known by a little tuft of feathers which hangs under the bill, and by a large tubercle which surmounts the top of it.†" Its harmoniously-blended plumage resembles that of the Wild Goose, and its great length of neck, and high knob at the base of the bill, and great size and majestic carriage, mark its resemblance to the swan; the belly is white; legs deep flesh-colour. The lower part of the throat swells out so considerably, that its pouch-like appearance caused the French to give it a nick-name‡ expressive of this peculiarity. In some specimens a brown stripe is perceptible along the back. Fresch remarked that the cross breed between the China and the common goose resembles the latter in the reddish colour of the bill and legs, but the China gander in form of head and neck, and has the same deep and sonorous voice. They are especially vigilant too, and, like dogs, will run at the heels of strangers coming into the poultry-yard.

They are very prolific layers, and though generally indis-

* Linnæus called it the *Siberian* goose.
† Griffith's Cuvier. ‡ *Jabouère.*

posed to hatch (which is not to be wondered at if they have the faculty of knowing that they must be in the straw for *thirty-five* days), will sometimes do so. They lay in spring and autumn also, after moulting, but will not sit in the latter season. The goslings attain a remarkably early maturity. Therefore this is altogether a valuable breed for crossing with the common domestic kinds.

The White China Goose is much smaller, very graceful in the water, and said to be one of the most prolific, of very small eggs, and most frequent and steadiest of sitters during its natural period of thirty-one days. Like the other Asiatic geese, it has a horny orange-coloured tubercle at the base of the bill, which is also orange.

The Egyptian Goose—Anas Ægyptiaca, Linnæus; *Chenalopex,* of the Greeks.—The ancient Egyptians venerated this bird, from its reputed affection for its young, as the stork has been similarly respected for attachment to its parents. In defence of its young, it will brave any danger and attack any supposed enemy.

The country about the Nile is more especially its native land, and it has been called on this account the Nile goose.

According to Buffon, it is of smaller size than our common wild goose, but of much finer plumage. The anterior is yellowish brown, delicately undulating* over a greyish white ground; belly ash-coloured; the back is marked in similar tracery, but in more narrow lines, which causes a deeper shading of brown (or reddish grey); the throat, cheeks, and top of the head, white; quill-feathers black; lower part of the back, tail-coverts, and tail, brownish black; larger wing-coverts bronze-green on a black ground; lesser wing-coverts white, with a black edging crossing their extremities. But we describe the bird differently—referring to our illustration,

* Buffon's expression, *zig-zag,* is, perhaps, more explanatory.

drawn from a living specimen; viz., the top of the head white, with a ring of bright brown round the eye; bill pink; upper part of the neck purplish, with brown shading at bottom; lower part of the neck and breast sienna; upper part of back and scapulars purple; lower wing-coverts white, with purplish black at the extremities; tail-coverts rich buff; tail-feathers purple; legs and feet reddish flesh-colour. It is characterized as full of fun and cunning, such as the fox possesses. Mr. Dixon had a pair which amused him exceedingly. They would cock their yellow eyes in the most comical manner, as if to express some droll sentiments to the persons who used to feed them, and whisper to each other, something after the low internal tone of ventriloquists. And they have a peculiar fashion, says Mr. Dixon, of standing opposite to each other, face to face, with their wings expanded, as if they were going to embrace, while they keep up a hissing conversation of different tones and inflexions. Their cry of alarm is like the bark of a cur dog; and when they are angry or alarmed, they can be very noisy, and continuously so.

The young birds are generally pinioned, lest they should leave their localities; but after two or three generations this preventive check to emigration would cease to be necessary. They enjoy worms as ducks do; and in this they differ remarkably from the tastes and habits of geese generally, though they resemble them in their appetite for grasses.

The Domestic Goose.—Of this there are no distinct species, and the few varieties differ in little else than size and colour.

The Toulouse is a round full-bodied bird; and were it not that the White goose is more delicately flavoured, the former would be, judging from aptitude for fattening and size, decidedly the best sort. Mr. Nolan, however, commends the flavour and tenderness of their flesh, and sug-

gests their cross on our common sort. Mr. T. Townley Parker, who made this experiment, had goslings which became larger and heavier than either of the parents, weighing fifteen pounds each when three months old, and reaching to nearly thirty pounds at from two and a half to three years old.

Mr. Nolan has for some years been in possession of this sub-variety, of which some specimens exhibited by him in London and elsewhere obtained first prizes. They have the following distinctions, in his own words: "Their prevailing colour is a blue-grey, marked with brown bars; the head, neck (as far as the beginning of the breast), and the back of the neck as far as the shoulders, of a dark brown; the breast is slaty blue; the belly is white, as also the under surface of the tail; the bill is orange-red; and the feet are flesh-coloured."* The domestic goose has such similitude to the grey-lag in the opinion of persons best qualified to pronounce judgment, that we shall assume they are its lineal descendants.

The *Embden Goose* is the large-white goose so common in Ireland. It used to be a great favourite. The name is that also of a town in Hanover, whence some of them may have been brought to this country. But the race has no peculiarities. Large white geese generally are understood to be meant by the appellation.

The offspring of a cross between them and the Toulouse, exhibited by Mr. Hewitt, at a Birmingham show, some years ago, were very large—the gander and two geese shown weighed sixty-seven pounds (being expressly fed for the occasion); but (Mr. Hewitt reports) "they proved unsuccessful as to prize-taking, and the following season their

* Mr. Nolan sold a pair of exhibition prize birds to Ibrahim Pacha, who took them with him to Egypt. The Earl of Derby has been an importer of the same sort of geese.

progeny degenerated sadly, the unvarying result, as I have found, of all cross-bred birds. I have seen, very frequently, the Embden and the China half-bred; these were weighty birds, that would have been a credit to any homestead, though far behind the pure Embden in respect of both appearance and utility."

The goslings of the Embden family are said to differ from those of the common sort, not only in being perfectly yellow in plumage, but also in having the bill and legs nearly of that colour, whereas these members are dusky in the common white variety.

The Toulouse and Embden have been crossed of late a good deal with the China goose, and the offspring has been of increased size, and distinguished by the yellowish brown of the plumage, the black bill,* and the dark stripe from the neck to the back, by which the China species is recognised.

Some handsome crosses between the China and the Embden, and with the Toulouse also, were shown last year at the Gloucester Exhibition of the Royal Agricultural Society, which surprised the spectators by their great size and fine proportions. When care is observed, after the first cross, to revert to the respective originals for breeding stock, the increased prolific quality in the new sub-varieties and general improvement may be reasonably expected. The produce of the first cross, however, is not to be inter-bred, else improvement ceases, and failure begins.

The vigilance of geese, whether in the wild or domestic state, is matter of history and experience. Their senses of seeing and hearing are so acute, that even on the wing, moving from thirty to forty miles an hour, and at a very high elevation, they can correctly discern the most suitable halting-places. And they distinguish the faintest sounds.

* In some specimens of the China, however, the bill is orange.

Livy the historian relates that it was by their cackling and clapping of wings that a Roman warrior was aroused from his sleep to the perception of the imminent danger to the defenders of the Capitol of Rome, from an enemy who, in the dead of night, had stealthily ascended the difficult height on which it stood. Neither sentries nor dogs heard the almost noiseless footsteps of the attacking foe, but some geese distinguished the faint sounds, and gave the warning and sonorous cries which led to the preservation of the garrison.

It would be difficult to invade a poultry-yard by night, and steal fowls from it, if the guardian goose were near them, and the inmates of the house attentive to its signals. Geese have had credit for possessing no small share of wisdom, too. A Roman philosopher kept a goose as his constant companion, and the warm and strong attachment to man of which this bird is capable has been illustrated by some remarkable facts. The incidents of an anecdote, for the truth of which Buffon is the guarantee, are too curious to be omitted here; the main points, however,—from a long story—shall alone be stated. Two ganders were in the habit of fighting for the possession of three geese, which consorted with them in a poultry-yard. One day, the narrator (who had the care of them), attracted by their screams, found the ganders belabouring each other desperately, while the three geese appeared terrified, and anxious, though vainly, to separate them. One of the combatants, a grey bird, being stronger, got the other, which was white, under him, and was about to give him the *coup de grace,* when the keeper came to the rescue. He raised the white, and put him on the grey, holding the latter down, while the other in his turn beat the undermost till he ran away screaming, and with drooping wings, followed by his three mistresses, while they raised a

dismal chorus. The white bird, in the mean time, remained apart, uttering cries as if his heart would break. He did not recover for some days, and in the mean time his rival enjoyed the undivided affection of the three females. Whenever the keeper passed by, the white gander advanced towards him, as if to complain of his melancholy position, and to thank him for the services he had rendered to him. The keeper was so touched by the mute eloquence of the appeal, that he contracted a sort of friendship for the bird, which he patted on the head and neck frequently. At length this gander intimated by gestures that he would be greatly obliged to his patron if he would make up matters between him and the three geese, who had cut his acquaintance, and thereby mortified his feelings exceedingly; and to this appeal the man assented, by conducting the discarded lover to them. Upon this trying occasion, the gander seemed to make a very pathetic address to them on the alienation of their affections, &c. This put his grey rival into a fury of rage and jealousy, and another set-to was the immediate result. The number of rounds fought occupied eleven minutes and a half, and in each the grey floored the white, from his superior weight and *pluck;* but the keeper, who might be termed the bottle-holder of the weaker combatant, raised him up, and put him on the back of the other, helping him to pummel him without mercy; until he was quite overcome, and severely punished by his adversary.* The three dames, not quite understanding, it is to be hoped, the unfair mode by which their grey husband was beaten, deserted him for the more recent conqueror, who became thenceforth, with sundry connivances on the part of his human friend, their acknowledged lord and master.

* Ganders are probably still kept for fighting in goose-pits, at St. Petersburgh; they peck at each others shoulders till they draw blood. Good fighting ganders have been sold at five hundred roubles.—Mowbray.

When the geese began to hatch, this gander became still more attached to his patron, and testified, at length, its love and gratitude in a very surprising way. Having accompanied him one day, as was its habit, to the boundary of the park, it was supposed by the man to have returned as usual to the poultry-yard; but instead of this, at the end of the mile and half farther, he perceived the gander at his heels in a woodland path, flying and running alternately: it followed the man from ten o'clock in the morning to eight in the evening, through a very circuitous journey, and without apparent fatigue; and from that time the keeper could never move, not even to church (except by stratagem), unaccompanied by this grateful and affectionate bird.

It is not the silly bird which it appears to be, from the poking style of its neck, and pompous gait; and it is capable of performances which birds having credit for more wisdom do not execute. Of its docility we shall adduce an instance. A gentleman had a gander whose ear for music was so good, that he would dance—very respectable steps, too; for his master, who, though not a distinguished philosopher, like the Roman Lacydis, was a great *whistler*. The gander danced to his whistling with evident pleasure. Now, this appeared strange to us, until we considered that there is a *whistling swan** (Luth.). And though we have not heard that this dignified bird has ever been seen to dance to its own whistling, it may possibly amuse itself (privately) in this way. And if so, it is not more odd that a goose, which partakes of the swan's tastes and character, should at least dance, if it cannot imitate the melody of the swan, to the whistling of another individual.

The inclosure of commons, and drainage of fens, has

* The species to which the ancients generally attributed so melodious a voice. There is also a whistling duck, *le canard siffleur*.

greatly diminished the number of geese bred in England. Though we do not concur in the terms of the complaint,

> "It's a shame in man or woman,
> To steal a goose from off a common;
> But sure that man's without excuse,
> Who steals the common from the goose;"

yet we must acknowledge, that the facilities for multiplying geese are lessening every day. In Lincolnshire, for instance, where several thousands of geese were kept on the fens, fifties are not now to be met. The magnificent herds and flocks, however, of cattle, horses, and sheep, which have superseded them, are an infinitely more valuable stock.

However, we can imagine the wailings of the gozzard, recalling to his memory the glorious days in the history of British geese, when an individual farmer had, frequently, a thousand old geese, each of which reared, on an average, seven young ones; so that at the end of the season, the owner had about eight thousand.*

It is not long since a Boston poulterer killed in one week, for the London market, 2,400 geese, besides 1,000 ducks and 500 turkeys.

The barbarous custom of plucking geese alive was regularly practised, according to Pennant, *five* times in the year; first at Lady-day, for feathers and quills, and four times from that date to Michaelmas, for feathers only. He saw the tails of goslings, six weeks old, plucked, "to habituate them to what they were to come to." Modern practice is not less savage. At eleven weeks, old and young birds are plucked, and then, every six weeks. If killed at Christmas, they have previously undergone the cruel operation four times. After the long feathers have been pulled, a little of the white down† is also

* Pennant.

† This is now worth thirteen shillings a pound; the temptation, then, to strip the poor birds is great.

pulled. In Ireland, we believe that geese are plucked but twice a year; but the feathers are torn off so roughly by the inhuman operators, who go about as dealers for the purchase of them, that the pinions of the tortured and shrieking patients are often so injured, that the maimed wing draggles to the ground.

Humane persons do not permit the pluckers to take off the quill feathers (which naturally fall twice a year), lest the pinions should be injured, nor any of the back plumage to be torn away.

The goose lays (and very early in the year), on the average of the Lincolnshire flocks, about twelve eggs before she sits: she will lay a second time also; so that two broods may be obtained; but these are exceptive cases in the Lincolnshire system. From their fecundity and production of quills, feathers, down, and weight of flesh, general hardihood and capability of foraging for itself, there cannot be a more profitable or economical bird to keep in appropriate places.

A gander may be allowed four or five wives: they are not precocious breeders, and the eggs should not be set of any stock under two years old. These birds do not attain full maturity before the age of four or five years, and their longevity is very great. Period of incubation from twenty-eight to thirty-one days.

BLACK LABRADOR. AYLESBURY DUCK. MALLARD, OR WILD DUCK. TEAL.

The Duck.

Anas: Linnæus.

Of the great number of species, varieties, and sub-varieties of this bird in its undomesticated state, we can notice but a few, whose brilliant plumage may distinguish them as pre-eminently ornamental among the aquatic birds, or whose flesh is of such excellent flavour, as to entitle them to our regard, and call forth our efforts to catch them and keep them if we can. The very few domesticated varieties or sub-varieties are of the same species, and very inferior in beauty of form and plumage to many of the wild, or of the partially tamed sorts.

The Mallard—Anas boschas, Linnæus; *Querquedula prima,* Aldrovandus,—being, it is conjectured with every probability, the parent stock of our domesticated geese, shall have the first place in our brief details. The drake is remarkable from having the tail-feathers curled upwards, and both have yellowish or orange legs and feet, which frequently distinguish the wild from the tame kinds; the latter being black, with not very numerous exceptions.

The poet's description of the mallard will answer sufficiently well:—

"Oft as the sun's last lingering ray
Gleams faintly o'er the fading scene,
By some still lake I bend my way,
Where decked in plumage brown and grey,
The *mallard* oft is seen;

With glossy neck of emerald hue,
And wings barr'd with the deepest blue
That sapphire gives; and ruddy breast,
By the clear dimpling waters press'd;
To sedgy covert, swimming near,
Where on her nest of rushes made,
His mate in humbler garb array'd,
Broods o'er her eggs with anxious care."

Both the head and the rump of the male are green, with beautiful reflections.

The plumage of the hen is much less showy, being throughout grey and rusty brown, with dusky black spots; there is no black on the throat as in the male, nor do the tail-feathers turn upwards. The difference between the sexes is so great, that inexperienced sportsmen have supposed they were birds of different species,* and not a faithful and loving pair of the same family.

Great numbers of mallards are bred and tamed on the banks of the Mississippi. The young birds being caught and taken care of, breed in the same place, and after a year become tame enough. Though the mallard breeds abundantly in the fens, marshes, and sedgy margins of rivers and ponds in Great Britain and Ireland, it principally comes to us from the more northern parts of Europe; passing southwards also to Belgium and Holland, and marshy localities in France. The northern and temperate latitudes of America and Asia are also the native lands of these migratory birds, of which great numbers return for breeding to their original homes at the approach of spring. The reclaiming of fens in England has greatly diminished the temptation which these visitors formerly had to remain among us. In Lincolnshire, the number of ducklings too young to fly, annually caught in the fens, was, in Pennant's days, prodigious, a hundred and fifty dozen having been taken in a

* Buffon, who has written as many chapters on seventeen species of the wild duck—"*la sarcelle.*"

single driving, when the old birds, being in moult, were unable to fly away, as the young ones were from immaturity. It is curious if true,—and we have no reason to doubt it—that the drake assumes the plumage of the duck about midsummer, and resumes his own after the summer months.

Mallards' eggs, found in alluvial meadows and osier-beds, have been successfully hatched in the poultry-yard, and the ducklings have proved to be almost as tameable and easily reared as the domestic sorts, but restless towards the winter, as if feeling a desire to travel.

The Teal.—This neat little duck is one of the smallest of the order *Anatidæ;* and so highly esteemed was it by the voluptuous Romans for their feasts, that they took great pains to domesticate its kind. They were more persevering and successful than we have been in thisresp ect. The top of the head, cheeks, and upper part of the neck in the male, are inclined to red; the under part of the neck black; a green band, bordered with two yellowish-white marginal lines, stretches from the eyes to the back of the neck; upper part of the body marked with black and white, in irregular alternate lines; wing-coverts brown; speculum metallic green, bordered by plumage of velvety black; flight-feathers brownish black; under tail-coverts buff, with a black band running lengthwise; bill black; legs blackish brown; the head is red, and there is a green band at the corner of the eyes, bordered with two whitish lines.* The sort which Buffon has distinguished as *the summer Teal,* and which he deems the smallest of the entire tribe, is of ashy brown plumage; the tips of the back-feathers white; a large black band on the wings, with reflections of emerald-green, and edged with white; the front of the body yellowish white; black spots on the breast and belly; the tail pointed;

* Griffith's Cuvier.

the feet bluish, and the interdigital membrane black. The sub-varieties of the teal are very numerous.

The Widgeon (*Anas Penelope*, Linn.).—Forehead yellowish white; head and neck rusty chestnut; face dotted with black; throat black; breast, colour of wine lees; back and sides striped with black and white zig-zags; wing-coverts and lower parts white; beauty-spots composed of three bands, the middle of which is green, and the lateral ones deep black; scapulars black, edged with white; under tail-coverts black; bill blue, but black at the point; iris brown; feet ash-coloured. Female smaller than the male; head and neck rusty, sprinkled with black spots; feathers of the back blackish brown, bordered with rusty; wing-coverts brown, edged with white; beauty-spots whitish ash-colour; breast and sides rusty; bill and feet blackish ash-colour.*

The widgeon arrives in this country, from the northern latitudes, in the autumn. We have frequently shot them in Ireland;† and from the reports of persons who have contrived to retain them, it may be concluded that their domestication, though not easy, is practicable. The great difficulty is to prevail on them to settle down quietly and breed in captivity; and many generations might pass before the irresistible desire for freedom would cease.

Some persons, however, have succeeded in obtaining broods from them in confinement; Mr. Bailey had several. Widgeons in freedom have been found breeding in large numbers about Loch Naver: Mr. C. St. John, the tourist, saw some there, the young ones resembling wild ducklings of the same age, but having reddish-brown down, instead of the ordinary green colour of the young mallard.

* "London Cyclopædia."

† Yet it would puzzle all the sportsmen in the United Kingdom to provide even for one day's feast the number of teals (and mallards) once laid at an archiepiscopal feast; namely, four thousand!

In a well-inclosed and fit place, they will, however, breed to some extent; and "the merest thread of running water will be sufficient to supply a miniature pond for them, which with the addition of tasteful breeding-boxes, low shrubs, a little rock-work, a few shells, some water-plants, and half a dozen gold-fish, would serve to make an elegant toy in a lady's garden." The neighbourhood of London abounds with inclosures for the accommodation of this class of birds.

All the wild sorts feed on the seeds of aquatic plants and insects, but they have no objection to eat grain, or anything else that the tame sorts relish.

The *Mandarin* duck is one of the most beautiful of aquatic birds. The general ground body-colour is dun; primary wing-feathers bright brown, shading into blue towards the back, and edged with white; quill-feathers dark brown, showing some white when expanded; tail-feathers metallic green; under-plumage white; feathers above the neck red, streaked with light brown; under the neck and on the breast purple; back metallic green and bronze; large dark eye, with white circle; bill crimson.

The *Carolina** duck is an exquisitely beautiful creature. It is the sixteenth kind of teal described by Buffon, and a native of America. He gives it a very superficial description, and probably never saw it, else he would have been enthusiastic in his admiration of it.

Mr. Dixon considers it the same as the "Wood," or Summer Duck (*Anas sponsa*). Buffon treats of the Summer *teal* as a different sort from the Carolina; but he seems to have been somewhat perplexed about these sorts—and no wonder, from the conflicting descriptions given by his predecessors and contemporaries. It merits a very full description.

* Catesby gave it the designation of "Little Brown Duck," from the *female* plumage. The name is quite inappropriate to the male.

"It is nineteen inches in length, and two feet four inches in extent; bill red, margined with black; a spot of black between the nostrils reaching nearly to the tip, which is also of the same colour, and furnished with a large hooked nail; irides orange-red; front, crown, and pendent crest rich glossy bronze-green, ending in violet, elegantly marked with a line of pure white running from the upper mandible over the eye, and with another band of white proceeding from behind the eye, both mingling their long pendent plumes with the green and violet ones, producing a rich effect; cheeks and sides of the upper neck violet; chin, throat, and collar round the neck pure white, curving up in the form of a crescent, nearly to the posterior part of the eye; the white collar is bounded below with black; breast dark violet-brown, marked on the fore part with minute triangular spots of white, increasing in size until they spread into the white of the belly; each side of the breast is bounded by a large crescent of white, and that again by a broader one of deep black; sides under the wings beautifully marked with fine undulating parallel lines with black on a ground of yellowish drab; the flanks are ornamented with broad alternate semicircular bands of black and white; sides of the vent rich light violet; tail-coverts long, of a hair-like texture at the sides, over which they descend, and of a deep black, glossed with green; back dusky bronze, reflecting green; scapulars black; tail tapering, dark glossy green above, below dusky; primaries dusky, silvery without, and tipped with violet-blue; secondaries greenish blue, tipped with white; wing-coverts violet-blue, tipped with black; vent dusky; legs and feet yellowish-red; claws strong and hooked."*

The Black Labrador.—This variety has gone under the names of Buenos Ayres duck, and the Black East Indian

* Wilson's "Rural Cyclopædia."

duck. The Zoological Society first received it from Buenos Ayres; but it is known in the south of England by the last-mentioned name, according to Mr. Dixon, who prefers this designation, from a belief that it was imported from India, and probably *vid* Buenos Ayres. Mr. Baker has advertised them under the first title. The plumage of the drake's body is black, with a greenish purple shade pervading it; and the bill also is black, with a tinge of green; the neck, back, and larger feathers of the tail and wings are lustrous with mineral green. The duck has a much plainer dress, yet tinged with the same colourings.

Two remarkable properties of this species are, that in the early part of the season, the duck lays *black* eggs, the shades of white gradually appearing in the subsequent layings, until the ordinary colour succeeds. An oily matter, which may be scraped off, causes this discoloration. They lay a little later than other ducks, but are as hardy; and are superior in having a high wild-duck flavour. Sometimes they moult white.

The two last species have been ranked under the domesticated class, though it is questionable whether they are not rather occupying a middle place, between the wild and the tame. They are rather in a transition state, from primitive freedom to confinement, and the habits of domesticated life.

At the head of our decidedly ordinary tame varieties we place—

The White Aylesbury.—Mr. Weigall has so correctly presented it to the reader in every outward particular, and it is so easily distinguishable from the two or three sorts of our poultry-yards, that verbal enumeration of its points would be superfluous. The white Aylesbury is the sort to be preferred, if it were only for the value of the pure white down with which it is so thickly covered; yet the

dark-coloured of this and all kinds is considered to have more of the smack of the wild duck. Buckinghamshire has long been celebrated for the great numbers of this breed which are annually reared there, the greater part of which are actually brought up by hand; and the cottages of the peasantry are fitted up in many instances with boxes and pens, for the rearing of these highly-prized ducks, and often on a large scale too, considering the small extent of space at the cottager's command. It is the pleasing occupation of many of the countrywomen—and the source from which they principally earn a livelihood.

The *Rouen** (*or Rhone*) *Duck* is one of the most useful and hardy varieties. Its usually dark plumage is rich, and more nearly resembles that of the original wild breed, the mallard, than any other species or variety of the tame duck. It has been placed at the head of many poultry exhibitions, which is a satisfactory test of the high estimation in which it is held. A drake and three ducks, successfully exhibited by Mr. Hewitt, at the Midland Show, during several consecutive years, weighed within a fraction of twenty-seven pounds, and without any special feeding for the purpose: afterwards when fattened for the occasion, they weighed above thirty-four pounds. They thus seem especially excellent in an economical view. Awkward in gait, dull in countenance, and with greatly-developed breasts, and bellies almost touching the ground, they are not graceful; but they are good creatures, eating as if they considered it their duty to grow fat and large; all their organs and capacities for food and digestion show a special aptitude for putting up flesh to a large amount; and the Rouen, which is darker than any of our other sorts, is well-

* If it came originally from this town, on the Seine, it is the same with the breed so common in that part of France, and in Paris. The earth-worms dug up in the fields on the banks of the Seine, are, it is said, regularly given to the ducks there, as the most healthful and fattening food. We should act on this hint more systematically than we do.

flavoured. The darkness of colour with many is a perfection, as *chickeny* flesh is by no means desirable in the duck, which improves in flavour the nearer this resembles the *smack* of the wild breed. They lay a great number of eggs. An almost marvellous return of the eggs laid by three of these ducks, has been made by Mr. Punchard :* viz. from February to July, 334. One of them laid every day during ninety-two days; she did not sit that season, the other two did.

The Musk Duck—Anas moschata, Willughby; *Canard musqué,* Buffon. — This name has been corrupted into Muscovy, though instead of being *Muscovites,* by descent, they are of South American origin. They have been called Guinea, Indian, American, and *Turkish* ducks also, from sheer ignorance at first, of their true birth-place. It owes its proper name to the odour of musk which it exhales.

This species, which is very large—two feet in length,—has some remarkable peculiarities. The drake has on the cheeks, caruncles as red as those of the Turkey; the plumage of the back is dark brown, with glossy green reflections; a large white spot appears on the wing coverts.

The female has either an intermixture of white, or is white altogether, in the plumage of the throat. This race has a solemn, heavy step, and is more silent than ducks generally. One of its singularities is, that it has no fancy for the water: if it gets into a pond to bathe, it comes out of it as fast as it can. From some cause or other its feathers have not the property of Mackintosh's cloaks in repelling wet; and this deficiency indisposes the Musk duck to aquatic performances. We are not qualified to reason closely on the power which the duck tribes generally have of lubricating their feathers with the oil which they extract with their bills from the rump gland, and thence dogmatically to infer

* In a communication to the Editors of the "Poultry Book."

a deficiency of this secretion as a cause of the comparative imperfection in swimming in the Musk species, because the utility of this oil has been denied; but we would suggest that inquirers should pay a visit to Mr. Baker's poultry-yard —where one of his servants will obligingly throw a net over some duck in the water, when in the act of applying this natural unguent to its plumage,—and examine the gland, from which they may express some of it. Has it been lodged there without design? and does the duck squeeze the gland to draw forth the oil merely to give a glossy look to its plumage? Is there no useful purpose served by this toilet operation? And why is it more oily in aquatic than in land birds? These are questions which others may decide.* The female of this race has great power of flight. She can rise very high; and would have no objection to roost even with turkeys on their elevated places: the tribe possesses, from sharpness and length of claws, a power of holding on, which their congeners have not. The drake would require to be lifted up to his mate's position, from his weight (about eight pounds) and consequent inactivity.

As the musk duck does not feel a desire to ramble in search of stream or pond,† it is easily kept in confinement, and the female will lay regularly within the bounds. The period of incubation in this species, if preserved pure and distinct, is prolonged to five weeks, though that of the common duck does not exceed thirty-one days. The ducklings of this family, originally brought from a very hot climate, must be

* Mr. Dixon suggests, and claims the credit of first suggesting, that the cause may be found in some minute structural peculiarity of the texture of the feather, which the microscope alone can reveal to us.

† An Aylesbury duckling, among a brood of chickens hatched by a hen, acquired from its nurse such dislike to water, that even at the age of four months, and though in a poultry-yard with ducklings, it remained apart from them with chickens, and would not accompany the others—least of all to the duck-pool.

kept quite warm and dry, and altogether treated with the delicacy of care bestowed upon young turkeys.

The domesticated duck is very subject to cramp—which corresponds with the *gargle* in geese. It arises, generally, from bad keeping, damp lodging,—and bad weather in the early stages of a duck's life—and carries off many ducklings. It must be terribly painful, from the distortions displayed by the legs.

The duck is peculiarly the poor man's bird (its hardihood renders it so entirely independent of that care which fowls perpetually require) ; and indeed of all those classes of persons in humble life, who have sloppy offal of some sort left from their meals, and who do not keep a pig to consume it. Ducks are the best save-waste for them ; even the refuse of potatoes, or any other vegetables, will with a little pollards, satisfy a duck, which thankfully accepts, and with a degree of good-nature which it is pleasant to contemplate, swallows whatever is presented to it, and very rarely occasions trouble. Though fowls must be provided with a roof and a decent habitation, and supplied with corn, which is costly, the cottage garden waste, and the snails and slugs which are generated there, with the kitchen scraps and offal, furnish the hardy ducks with the means of subsistence. And at night they require no better lodgings than a nook in an open shed ; if a habitation be expressly made for them, it need not necessarily be more than a few feet in height, nor of better materials than wattles and clay mortar, a door being useless, unless to secure them from thieves.

ON THE

CHOICE AND MANAGEMENT OF STOCK.

BREEDING.—If for producing a stock of fowls, three, or at most four hens are sufficient for their polygamous mate. In hotter climates than ours a greater proportion of hens is common; and if not for the purpose of breeding, fifteen or even twenty is not considered an excessive number. The French peasantry think it an extravagance to keep more than one cock for so numerous a harem, but fowls in our more humid and frequently cold seasons, have not the animal energies which the drier and more genial climate of France excites; and besides this, the production of eggs alone for commercial purposes is the prevailing object with the French poultry-keepers. If they expect to raise as fine a race of fowls as the Dorkings, they must keep a greater proportion of males for the females. If eggs alone be the object, one cock will suffice for a score or more hens. But though the males are not absolutely necessary, where eggs for eating are only required, the hens should never be left without mates; for they seem to yearn for their society, and wander about, evidently in want of the domestic discipline and control which the stronger sex is designed to afford at all times to the weaker.

In all cases, there should be a succession of pullets for

the production of eggs, and to be fattened off as they cease laying. But if chickens are not wanted for sale, they are generally wanted to renew the stock of hens; as no one can deny the expediency of having healthy pullets to add yearly to the old stock, so that no cock or hen shall be kept longer than three years.

The Dorkings being such good sitters and mothers, should be employed rather in hatching and rearing broods than in producing eggs for the table, except in the seasons when incubation would be injudicious or impracticable.

The cock, of whatever breed, should be strong, healthy, and spirited, free in his movements, disposed to crow frequently, with so little of the selfishness of the *gourmand* as to provide as far as he can the most delicate morsels, such as worms, insects, by scratching the ground industriously, and soliciting his mates to partake of these luxuries which he himself politely refuses to touch.

A French writer has suggested a good test for ascertaining the comparative powers of two cocks with apparently equal pretensions: "set them to fight together, and select the conqueror; for hens, like other females, always prefer the male who shows the most courage and spirit."

> "For 'tis always the spirit most gallant in war,
> That is fondest and truest in love."

But the rather loose morality which has suggested the *duello* for settling the rival claims of two chanticleers to be cock of the roost is not always attended with success, as the following fact will exemplify. We had but lately a fine Dorking cockerel, who seemed to be on very good terms with four staid matronly hens—as we supposed them to be; but one of them—and this Dame Partlet was the sovereign of his heart,—under the impulse of some gadding propensities, rambled through our garden hedge to an adjoining field,

where the seductive crowing of a neighbour's cock at the head of his concubines, reached her ears—"Hark, hark, I hear the strain of strutting chanticleer," and enticed her beyond the limits of her own grounds, and what was worse, as we suspect, beyond the bounds of strict propriety. Her going astray might, however, have been but the effect of simple curiosity: be this as it might, her mate, with very natural suspicion and awakened jealousy, quickly traced her steps, and found himself confronted with the seducer, whose loud and boastful crowing must have been bitterly insulting to the younger and forsaken bird; of course they had a prompt, keen, and sanguinary encounter, which terminated in the most disastrous manner. Our beautiful bird was discovered in such a wounded condition as to be disabled even from limping back to his old yard—we could not even say with the poet,

> "And honest Jack, who lately banged the foe,
> Now hobbled homeward on his wounded toe."

He was brought home in the arm of the cook, who, from pure good nature, on finding him irrecoverably disabled, cut his throat—and in due course transformed him into cock-a-leeky—and was only comforted for this serious loss and inconvenience, by the considerations that the rival bird had lost both eyes in the affray, fallen into a fit, and experienced the same final fate. The moral of this is obvious:—the poultry yard and range should be so secured that erratic Partlets shall not have the power of escaping from their own premises.

When mated, the cock should be able to preserve his dignity, and, which is not always an easy matter, to restrain with determination, and yet with gallantry and kindness, the occasional ebullitions of violent temper among his hens; of which, by the way, the white ones of the Dorkings have the

reputation in their principal locality to be the most quarrelsome of the whole race.

"A good cock of two or three years' experience will, in five minutes, restore order into an uproarious poultry yard. He does not use harsh means of coercion when mild will suit the purpose. A look, a gesture, a deep chuckling growl, gives the hint that turbulence is no longer to be permitted; and if these are not effectual, severer punishments are fearlessly administered. His politeness to females is as marked as Lord Chesterfield's attention to old ladies, and much more unaffected."*

His sense of personal vanity leads him to be very particular in arranging his plumes with his bill; and he is so vain of his vocal powers, that if he hears the voice of another cock, he replies to it in successive and louder strains.

In a word, select a bold, active, impudent sort of cock, with a proud and stately, and yet grave strut, such as our portrait of a Dorking cock presents; contemplating which we naturally exclaim :—

"How high his haughty honour holds his head!"

Does he not look as if he was brave, daring, and courtly, ardent in love, and ever ready,

"In gallant thought to plume his painted wings?"

If he take a decided dislike to any of his hens, he should without delay have the power of divorce; from a principle of even-handed justice, the hens should also be allowed a similar privilege, else the conjugal roost will be an uneasy one to both parties. Strange to say, cockerels at a year old should be mated with hens at least two years old. After four years at most the cock should give place to a younger and fresher bird.

* Dixon.

As there is no general rule without exception, so in the biography of poultry we read sometimes of Xantippe-like hens. M. Reaumur has recorded that two of his hens, after having lived in apparently happy commerce with a particular cock, took so strong a dislike to him, that they never ceased to peck at him, so that they stripped his head of his feathers, and finally killed him. A very strong and beautiful cock was put in his place; he was removed from them after two days' maltreatment. Two more were treated in the same way by these furies, who would have killed all the cocks in the poultry-yard. A cock will occasionally act with the same sort of capricious cruelty towards his wives, for which it is impossible to suggest the true causes.

For breeding hens, of whatever kinds, all such should be rejected that are not good types of their respective kinds, and of steady habits and mild dispositions, which, however, can only be proved on trial. A hen which will venture to retort upon her husband, or give utterance to any of her sentiments or feelings on any occasion, or in any society, by crowing, should be handed over to the cook, if it were only to fulfil the proverb: "A hen that crows never comes to a good end." Hens should also be rejected as breeders after the third or fourth year, unless they should be valuable and perfect in their kind; and Mr. Boswell confirms our own opinion, in the following remark. The breeder "may be left to follow his own judgment regarding the varieties he may prefer. We have always found it, both as matter of taste, and most profitable, to have each flock of its own peculiar and pure variety. Whatever may be the number kept, those deemed sufficient for one cock should all be of the same kind. The different varieties may all commingle together, without inconvenience, except when eggs are wanted for the purposes of hatching; but at that time, those of the variety required should be carefully separated from the

others. By this means the breed may either be preserved pure, or judiciously mixed by crossing."

LAYING.

The pullets of the Dorking not being so precocious as the Cochin-China, do not lay quite so soon,—rarely till they are seven months old. They indicate their disposition to lay by the change in comb and wattles from a dull hue to a bright red, and the animation of the eye and general demeanour, and with frequent cackle for three or four preceding days. "These signs rarely prove false; and when the time comes that a hen* wants to lay, she appears very restless, going backwards and forwards, visiting every nook and corner, cackling the while as if displeased because she cannot suit herself with a convenient nest. Not having looked out for one previously, she rarely succeeds in pleasing herself till the moment comes she can no longer tarry, when she is compelled to choose one of the boxes or baskets provided for this purpose in the fowl-house. There she settles herself in silence and lays."† But her silence is broken after this act of productiveness, by a loud cackling, indicating pride and pleasure and, though unknown to herself, intimating to her owner or feeder that an egg is at their service. On removal of this, another should be substituted, either artificial or real; a wooden imitation is better than one of chalk, as the true egg sometimes may be broken by rude collision with the other; but some deception of this nature must be practised on her, or she will forsake her nest and lay in a less convenient place. An addled egg is not desirable as a nest-egg, as it may be broken, and may render the nest offensive.

Providing a nest by anticipation cannot of itself induce a

* The pullet is not raised to the rank of a hen until she at least has laid an egg. The matronly character cannot properly be given to her till she has incubated.

† Mowbray.

hen to lay, though it may in due time coax her to lay in a desired place, because it is physically impossible that the desire to lay can produce an egg, which must have been previously organized, formed, and matured.

Pullets hatched in March or April will lay in October or November; and a brood in May or June will begin to lay about Christmas; thus a winter supply may be procured by having pullets of successive broods, unless the cold humidity of the weather (clear, dry, frosty weather does not equally retard their laying) should so depress their physical energies as to prevent the internal egg formation. Pullets of the prolific sorts at first lay every day, and if properly treated, from twelve to twenty eggs, when they usually cease for some days, and then re-commence, continuing, perhaps with intervals of a few days, until the desire for incubation arises. One of our Cochin pullets began to lay early in December last, and continued to lay daily until the 18th of January, when unfortunately she was allowed to sit; the season being unusually inclement, and artificial warmth not being provided in the poultry-house, the brood perished. A Dorking pullet began to lay for us in January, and produced eggs, with very little intermission, during the whole spring, and until she sat in June.

It is well known that it is not the severity of weather which prevents fowls from laying, especially old hens. These moult late in the season, and seldom get their new feathers until Christmas, and during the renewal of their feathers, even to their full growth, the exhaustion and debility of their bodies is such, that there remains in them no sufficient elements of a nutritive nature to generate and develop eggs.

Nothing promotes the laying of hens in full health, in the winter months, more than the warmth which may be obtained by having the hen-house near a chimney, in which a good fire is kept—an oven, a malt-house, or a stable, where the

hens may be provided with a snug roosting-place; or any place where cattle are kept, will forward and sustain the laying.

"It is worthy of remark," says Mr. Boswell, "that among the Irish peasantry, whose poultry occupy at night a corner of the cabin, along with the pig, the cow, and the family, the hens frequently lay very early in consequence of the warmth of their night's quarters, and there can be no doubt this is the chief secret for having new-laid eggs in winter, paying at the same time due attention to protect the hens from wet, and to have them young, or at least early moulted."*

THE STRUCTURE OF EGGS.

"Upon opening after death the body of a laying hen, a

* Mr. Martin, in his excellent treatise on the Poultry-yard, in doing the editor of *this* publication the favour of quoting from his "Hints to Small

cluster of eggs (called the *ovarium*), or rather the rudiments of eggs, may be observed, from twenty to a hundred, or more, from the size of a pin's head to that of a boy's marble, according to the different stages of their growth. A rudimental egg has no shell or white, but consists at first wholly of yolk, on whose surface the germ of the future chicken lies; both the yolk and the germ being wrapped around with a very thin membrane. When the rudimental egg (or *ovum*), still attached to the egg-cluster, becomes larger and larger, and arrives at a certain size, either its own weight, or some other efficient cause, detaches it from the cluster, and makes it fall into a sort of funnel leading to a pipe, called an *oviduct*. Here the yolk puts on its mature appearance of a thick yellow fluid, while the rudimental chicken, or embryo, lying on the surface at the point opposite to that by which it had been attached to the *ovarium*, is white, and somewhat paste-like."

When two or three of these nearly perfected eggs fall into this funnel about the same time, they sometimes become united there, and form double or triple eggs. Such misshapen eggs, as they become in this case, have been foolishly termed cock's eggs by ignorant people, who, not having properly watched the laying hen, so as to prove them to have been her productions, have attributed the laying of them to the cock, and considered him as a monster, likely to bring ill luck to his owner; he therefore falls a victim to a delusion, as old women accused or suspected of witchcraft were sacri-

Farmers" (first published thirty years ago), has illogically inferred that he has recommended "that fowls, pigs, children and parents, should all herd together around a turf fire in a smoky cabin, which must necessarily be a receptacle for filth, and a generator of disease,"—from a mere allusion in a preceding passage to the *warmth* of the cabin, as *illustrative* of the effect of warm temperature on laying fowls. Mr. Martin's subsequent comments on Martin Doyle's "semi-barbarous plan," were not just deductions from the premises.

ficed in less enlightened days. A diseased or too irritable a condition of the *ovaries*, possibly occasioned by too stimulating food, will cause the above irregularity of form.

"The white, or albumen, now becomes diffused around the yolk, being secreted from the blood-vessels of the egg-pipe, in the form of a thin, glairy fluid; and it is prevented from mixing with the yolk and the embryo chick, by the thin membrane which surrounded them before they were detached from the egg-cluster, while it is strengthened by a second and stronger membrane formed around the first, immediately after falling into the *oviduct*. This second membrane, enveloping the yolk and the germ of the chick, is thickest at the two ends, having what may be called bulgings* termed *chalazes* by anatomists) which pass quite through the white at the ends, and being as it were embedded in the white, they prevent the enclosed yolk and germ from rolling about within the egg when it is moved.

"The white of the egg being thus formed, a third, or rather a double membrane, much stronger than either of the first two, is formed around it, tending still more to keep all the parts in their relative positions.

"During the progress of these several formations, the egg gradually advances about half way along the oviduct; it is still, however, destitute of the shell, which begins to be formed by a process similar to the formation of the shell of a snail, as soon as the outer layer of the third membrane has been completed. When the shell is fully formed, the egg continues to advance along the *oviduct* till the hen goes to her nest and lays it.

"From ill health or accidents, eggs are sometimes excluded from the oviduct before the shell has begun to be formed, and in this state they are termed *wind*, or *soft* eggs."†

* Mr. Martin uses the term "cord," which more clearly conveys the description.

† Mowbray.

This want of shell has been often supposed to arise from the inability of the hen to obtain lime in the course of her feeding. Nature gives her an instinctive desire to pick lime, mortar, or any substances containing it; and this is a hint that she requires such condiment to her food; and we know that lime is an element in the composition of the egg-shell. But this element is in some manner supplied, even where the hen has no apparent access to lime in any form; perhaps the water she drinks contains a sufficiency for her purpose. Wheat abounds in it; but unless this grain, or some of the lime-plants enter into her food, we cannot understand how the supply is obtained when the hens are confined to such aliment as do not contain lime. The same desire for lime is not manifested by geese and ducks in their laying season, nor do we think of supplying them with it, as a material for their internal shell formations; yet this substance must be as necessary in one case as the other. We would assist Nature, though we suspect she could dispense with our aid. Our practice, however, to be on the safe side, is to give powdered bones, oyster-shells, and other substances containing lime in large proportions; and we have had cases in which such matter has appeared to be corrective of a tendency in hens to lay soft eggs—which, by the way—Mr. Jennings says, are never laid in a nest. Perhaps, because they come so prematurely and suddenly into the world, that the hen has no time to betake herself to a nest.

"One important part of the egg is the air-bag, placed at the larger end, between the shell and its tiny membranes. It is, according to Dr. Paris, about the size of the eye of a small bird in new-laid eggs; but is increased as much as ten times in the process of hatching.

"This air-bag is of such great importance to the development of the chick, probably by supplying it with a limited atmosphere of oxygen, that, if the blunt end of the egg be

pierced with the point of the smallest needle, the egg cannot be hatched, but perishes.

"From the air-bag being thus placed at the blunt end of the egg, important signs may be taken to distinguish the freshness of an egg; for, as the air in the cell will not abstract heat from without, like a more solid substance, it is a usual practice to apply the tongue to the blunt end of an egg, and if it feels rather warm, it is stale, but if cold, it is fresh. This, however, is a much more uncertain test than the comparative size of the small circle, seen by the transmitted light of the candle or otherwise—a small circle being a proof of freshness, and a large one of staleness.

"Instead of one rudimental egg falling from the ovarium, two may be detached; and will, of course, be inclosed in the same shell, when the egg will be double-yoked. If these double-yoked eggs be hatched, they will produce rarely two separate chickens, but more commonly chickens with two heads and the like."*

"The white of the egg (*albumen*) is without taste or smell, of a viscid, glairy consistence, readily dissolving in water, coagulable by acids, by spirits of wine, and by a temperature of 165° Fahrenheit. If it has once been coagulated, it is no longer soluble in either cold or hot water, and acquires a slightly insipid taste. Experiments show that it is composed of eighty parts of water, fifteen and a half parts of albumen, four and a half parts of mucus, besides giving traces of soda, benzoic acid, and sulphuretted hydrogen gas."†

Eggs vary much in form and colour, from the nearly perfectly oval, like those of the Dorking; others, more blunt at the extremities, like those of the Cochin China, and others pear shaped, yet more pointed at one end than the other. Colours vary from a French white to a pinkish white, buff, orange, cream-coloured, and speckled of the turkey. Hens,

* Mowbray. † Bostock's Physiology.

even of the same family, have such peculiarities in their respective eggs, that the persons who attend to them can, even where there are many hens and many eggs, distinguish by which hens they were laid—as a shepherd would recognise the distinctive features of each individual of a large flock, even though of the same age and breed.

TO PRESERVE EGGS.

Many modes have been used for keeping eggs fresh. From Columella to the present day we have had plenty of wise and foolish suggestions for this purpose. Straw, bran, meal, salt, and old malt, as coverings, and baths of brine, were the old prescriptions.

The ancient writers on the subject did not, it seems, know the philosophy of the matter, which the French writer M. Réaumur first made known. He ascertained the porosity of the shells, and the existence of air within the egg; which led to the results affecting our present subject. He discovered that eggs, after being laid, perspire through their shells; and succeeding men of science have discovered the pores through which the moisture exudes, these pores communicating between the internal and external air. This communication between the inward and outward air is shown by placing an egg in a glass of water in an exhausted receiver, which will cause air bubbles to issue from the egg into the water. And the transpiration of moisture (which is the cause of the putrefaction of the egg), can be proved by putting an egg into the receiver of an air pump, and exhausting the air, when the liquid within the shell will be seen oozing through the pores. This escape of moisture of course proceeds more rapidly in warm than in cold weather, and the evaporation through the shells is most rapid and powerful when exposed to the sun's rays, and on the contrary, the transpiration is checked in cold weather. These

simple facts being ascertained, the natural remedy suggested itself, of which a covering of straw, bran, and such porous substances was but an imperfect foreshadowing. Grease, gum, or any impermeable varnish which would close the pores, was the effective remedy for preventing the internal fermentation and putridity which must otherwise take place.* M. Réaumur preserved (varnished at first) eggs for one or two years, which though eatable were not well flavoured; and afterwards found that lard, and especially a mixture of mutton and beef suet, melted together and strained, was the best preservative. He also tried olive oil and butter, and found that these and similar substances kept his eggs in a perfectly fresh state during many months. A most important result of a certain mode of preserving the natural moisture in eggs, and therefore their substance unexhausted, is, that they may be conveyed from one country to another during long voyages and journeys. But on such occasions all motion should be avoided that might tend to the confusion of the component parts, and thereby cause decay.

By placing eggs, and not in contact, on shelves or frames so formed for them, that the smaller end may be downwards, they may be kept fresh for some time; because in this position the yolk is suspended in the albumen, and enveloped by it; if otherwise placed for a length of time, the yolk would come in contact with the shell, which would soon cause injury and decomposition: the safer course would be to grease them.

Economists will be pleased to learn that a very small quantity of greasy matter will suffice for the above purposes; the bigness of a pea of fat or butter is enough for any egg.

At the same time it is fair to state that old ladies' practice sometimes seems to demolish a great deal of our philosophy. A correspondent of the *Agricultural Gazette*, informs us that

* "Mowbray."

an experienced housekeeper had a long shelf with twenty or thirty dozen holes in which she preserved eggs fresh, by keeping them upright in the holes, and turning them upside down every second day. The suspension of the yolk in the albumen was of course obtained by this position of the eggs; and to this we should attach importance, and attribute her success.

But the same correspondent informs us that by putting eggs within the circumference of a hoop on the floor of a room, and every other day gently drawing it backwards and forwards, they would remain equally fresh.

If this be true, we would not give a fig for our philosophy, unless (what is by no means intimated in this case) the eggs are all to be packed upright.

Eggs produced by unmarried hens keep longer it is said than others; they are, of course, only fit for the table.

The immersion of eggs in sulphuric acid is also suggested as a preservative; the sulphuric acid would set free the carbonic acid gas contained in the carbonate of lime in the shell, and unite with the lime, forming consequeutly sulphate of lime, or plaster of Paris,—an air-tight covering for the whole egg.*

Many persons have attested that the form of the egg indicates the sex of the future bird, and the ancient Roman writers on the subject asserted that the round produce females, and the rest the males. But Aristotle believed the contrary to be the case, and pronounced that long and sharp eggs are female, but that those that are spherical and have a convexity close to the sharp end, are males. Maria† also says, that the long-shaped eggs produce males, thus espousing the Roman authorities. The breeders of Game fowls are said to distinguish the eggs containing the embryo sexes. A correspondent of the *Agricultural Gazette* states,‡ the mode pur-

* See "Mowbray." † *Agricultural Gazette.* ‡ *Ibid.* Sept. 22, 1849.

sued in the north of Scotland for ascertaining the sexual distinctions to be as follows:—"The eggs are, one by one, poised in the fingers of the left-hand, with the broad end uppermost, and in that position held close to the light of a candle, or before a bright sun; the little finger of the right-hand is then placed behind the eggs near the top, faintly to shade the light. When thus placed, and the egg turned gently round, as a top would spin, the hollow or vacuum, about half an inch in diameter, will be distinctly seen inside the egg. Now, if this hollow be exactly on the top, the egg will produce a cock; if on the side, it will produce a hen. If the egg has no such vacuum or hollow, either on the top or side—as is the case with all hens' eggs, where no cock is kept to impregnate them,—no one in the secret would place any such under the hens for incubation, or in the hope of its hatching." Acting upon this principle, another writer in the same periodical had eight cock birds and two pullets from ten of his largest eggs; and from ten smaller ones hatched, there were eight pullets and two cocks. The magnitude of the eggs irrespectively of their forms, seems in these cases to have been the relative distinctions; and without very deep philosophy, it may be assumed in this instance that the embryo of the larger and stronger sex will be by creative wisdom encased in the larger shell, which will contain the more abundant supplies of nourishment for it.

The word egg, as limited in application to the feathered tribe, is the same in all its essential points, from the egg of the huge ostrich to that of the diminutive humming bird. It is composed of four distinct parts, viz., the shell, the enveloping membrane, the white, and the yolk. The shell contains 2 per cent. of animal matter; 1 per cent. of phosphate of lime and magnesia; 97 per cent. of carbonate of lime, with a little carbonate of magnesia.*

* Dr. Trout.

"The shells of eggs are nicely adapted in thickness to the strength of the young bird that is to escape; but their thickness and compactness is much greater in the eggs of some classes of birds than in those of others. The little goldfinch could not break through a shell like that of a barn-door fowl; and did the barn-door hen lay eggs with shells as thin as those of the eggs of the goldfinch, her weight would crush and destroy them. The chick of a guinea-fowl would try in vain to escape from the egg of an ostrich, from the shell of which a drinking-cup may be formed, thicker than china, and almost as hard; and perhaps not less than seventeen inches in circumference. This nice adjustment is but one of the countless instances, which, in what are termed the operations of Nature, ought to call forth our admiration of the superintending providence of the Creator."

The thin enveloping membrane in the egg consists of coagulated albumen, and lines the entire shell, except at the larger end, where there is a small vacant space between it and the shell, called the air-bag.

The white (or albumen), somewhat viscous, is a liquid consisting of 4.5 per cent. of mucus, 15.5 per cent. of albumen, and 80 per cent. of water.*

The yolk is a very thick yellow matter, surrounded by a peculiar membrane, and is kept in the centre of the egg and surrounded by the albumen, by two cords, called *chalazæ*, which attach it to the membrane of the albumen. And the relative proportions of these parts are, about 10 per cent. of shell, 60 per cent. of white; and 30 per cent. of yolk.

Every egg loses weight, and this is another reason for preventing, by closing the pores by some means, the entering of the oxygen of the atmosphere. The weight has been known to diminish, in two years, one half; and therefore

* Dr. Bostock.

an egg, used to test the specific gravity of brine, or other liquid, should be perfectly fresh.

M. Réaumur mentions an instance of extreme simplicity, shown by one of his tenants' wives, who once sold him a large batch of eggs for hatching in one of his experimental ovens, though no male bird had associated with the hens for some weeks previously to their laying; these, though good for eating, were of course unprofitable to the philosopher.

There is a twofold reason for improving the classes of poultry, so that the largest eggs may be obtained from them in their relative classes: first, because the heaviest egg produces the largest and strongest chickens; and, second, because a greater quantity of food is obtained from the larger eggs. If, then, eggs were sold by weight and not by number, poultry keepers might become more careful in the breeding and rearing departments.

The kinds of fowls most famed for frequent laying, are pretty nearly in the following order—as regards our purposed list:—the Hamburgh, or as they are also called, Dutch, every-day and everlasting layers; the Cochin-China, Spanish, Polish, Dorking, Game, Bantam, Malay, and Pheasant Malay.

The Dorkings are such constant sitters, and such good nurses to their broods, that they are often especially chosen to hatch the eggs of other birds, such as the Spanish, Polish, and Hamburghs, which are more disposed to produce eggs than to incubate them. Sometimes, too, the eggs of the Aylesbury duck, in particular, are placed under her; and also turkeys' eggs, or even a combination of these sorts with her own eggs, or those of any of the gallinaceous order that are confided to her hatching. Such a mixture, even supposing the chicks to be simultaneously hatched (by putting the eggs under her according to the number of days they will severally require hatching), must cause some uneasiness

and distraction of thought, from the different instincts of her diversified progeny, so that she will hardly know how to divide her attentions among them. The chicks will desire to scratch for insects, while the ducklings will escape, if they can, to bathe, and turkey chicks would demand more than their fair proportion of maternal care.

"The constitution of an egg exhibits very many and most striking evidences of the design and beneficence of the Creator, in the form of perfect and wonderful adaptations, jointly to its immediate purpose of developing, feeding, and maturing an embryo bird, and to its incidental and secondary, though scarcely less important, purpose of affording food to man and to other animals. The peculiar composition of the shell most beautifully combines the properties of a strong shield, a porous sheath, a smooth coat, and a frangible or facile doorway; while the chemical elements of both the white and the yolk, besides possessing mighty mutual adaptation for developing the bird, are singularly eminent in nutrition, and exert almost the highest possible power as food, both in the embryo bird, and upon the digestive system of a human being."*

We have seen eggs from three to four ounces' weight, with double and triple yolks, frequently laid by a Cochin-China hen, which, on being put on a cooling diet, ceased to produce such unnatural ones. The hen in question is a voracious feeder, and has a crop most ungracefully protuberant and capacious.

This monstrous production, for such it must be considered, has been noticed by Aristotle. "Double eggs have two yolks however, which sometimes, that they may not be confounded, are separated by a thin interstice of the white; and sometimes the two yolks are in contact with each other, without

* "The Rural Cyclopædia," edited by the Rev. John M. Wilson.

this interstice. There are also some hens that bring forth all their eggs double, so that in these also, the above-mentioned circumstance happens respecting the yolk; for a certain hen, having brought forth eighteen double eggs, disclosed a chicken from each, those eggs excepted which were unprolific. Two chickens also were disclosed from each of the double eggs, but one of the chickens was larger than the other, but the last chick that was disclosed was a monster."*

Buffon gives some curious information on this subject:—"There is generally some relation between the colour of eggs and the plumage of the parent birds; for instance, the eggs of a raven are greenish brown, spotted with black; those of a black crow are of darker brown than those of the raven; those of the magpie variegated and spotted—and so through varieties of common wild birds, which he enumerates. The eggs of the grouse are whitish, with yellow spots; of the Guinea-fowl, like their feathers, white, with round spots (on a dark ground); so that there appears to be a relation between the colours of the eggs and the plumage of birds. The tints, however, are much less vivid on the eggs, and white prevails in many of these, because in plumage generally, there is more white than any other colour, especially in the female, whose colours are always less strongly marked than those of the male birds. Now, our white, black, grey, yellow, and mottled hens, produce perfectly white eggs;—if, then, all these hens had remained in their natural state, they would be white, or at least would have much more of white than any other colour in their plumage. The influences of domestication, which have changed the colour of their feathers, have not been sufficient to change that of their eggs. This change of colour in the feathers is but superficial and accidental, and only occurs in pigeons and our

* Taylor's translation of "History of Animals," book vi.

domesticated poultry. All the others which are wild, preserve their colours without alterations, except what arise from age, sex, or climate, which are always more decided, sudden, and less numerous, than those which take place in the domesticated state." *

LAYING.

Pullets of some breeds will begin to lay in six months; therefore eggs will be had from pullets in the first season, from about the first of October to December, according to their birthtime; and some of the hens will, unless in very cold moist weather, recommence their laying after moulting, —we may say from January to February—though the older ones, not being fully refeathered until Christmas, will not lay before spring. Quiet and undisturbed laying places should be provided in sufficient number to accommodate all the layers, which generally having need to retire to their nests in the early part of the day, should not be kept waiting for a vacant place. When it is desired that a particular pullet or hen should sit, it has been recommended to leave her eggs as laid in the nest; it being assumed that the course of nature will lead her to sit when a convenient number of eggs has been laid. "Fowls, in their native haunts, never lay more in a season than what they can hatch, from which we may partly conclude that no artificial means are required to induce a hen to sit as soon as she has laid her hatch, but that she does not do so in many instances, in consequence of the eggs being taken from the nest." Very few people try the experiment, not choosing to risk the eggs; therefore we are left to conjecture the results of such practice generally. In an individual case, to which Mr. Trotter refers,† it appears to have had the effect. "The eggs were not taken

* Buffon, tome iii. p. 186. † Trotter's "Prize Essay."

from the nest, and as soon as she had laid about thirteen, she commenced to sit." By taking away the eggs of pheasants, the same writer adds, as fast as they are laid, as many as fifty may be got from one pheasant in a season; whereas we are to infer she would sit, when the ordinary number for incubation had been laid, if not robbed of her eggs, and thus induced to lay more. We certainly find an argument in favour of this theory in the fact, that many of the wild feathered tribe will, when robbed of their nests, lay and sit again, though otherwise they would not have produced another hatch of eggs.

Laying hens should be fed freely on barley, tailings of wheat, and hemp-seed now and then. Indeed, high feeding is one of the secrets for promoting laying, which the wise men of old adopted. Besides chalk, and "barlye halfe sodden, or millet wheate." we are recommended (by Mascall), to nourish "the fairest hennes to lay egges all the winter, as well as at other times, with toasted bread soaked in ale or small wine, mixte with some water. Some doe take of water and milke, and soake the toastes therein from the evening to the morning, and so give it to them on the morrow to their breakfast, and at night they give them oates or barlye."

HATCHING.

Hatching, as defined by Dr. Johnson, is the production of young from eggs, by incubation, or the act of sitting upon eggs. This, however, is not strictly accurate, because the embryo may be quickened and born by other means. Birds have been artificially hatched in *Mamals*, or hatching-ovens, by the inhabitants of the Delta, and by the Chinese, and the practice has been introduced into different countries of Europe by men of science, whose success, while it shows the high degree in which the art of man can aid, or even be

substituted for, the work of nature, testifies, also, that imperfection always distinguishes what is human, from that which is of Divine workmanship. No artificial heat succeeds so well as that which is natural; it fails in some particulars. For instance, among the numerous birds born by artificial hatching, many die from debility. It is comparatively easy to bring chicks into existence without the warmth imparted by a sitting bird, but it is difficult to rear them without the natural agency of a mother or nurse during the first three or four weeks. And though we will not go the length of asserting, that monsters are more frequently born—creatures, for example, with two heads, or three legs,—by artificial hatching, and that the instinct of incubation is not transmitted to birds so hatched—we believe, that if the bills of mortality of young birds sent off from the trays of patent incubators were duly recorded and published, they would show many cases of imperfections, and a considerable number of premature deaths. The immediate, or what would be more probable, the gradual extinction of hereditary tendency to incubate, in birds artificially hatched, would, however, be of very minor consideration, because a sufficiency of domesticated poultry for incubations could always be reared by the natural methods; provided that the numbers for the direct supply of an important article of food be really increased by the artificial means, this secondary objection, if, indeed, founded in fact,* might be dismissed altogether.

* It is expressly denied to be fact by Mr. Cantelo, who says that he has reared several generations lineally descended from those hatched by his apparatus, without perceiving any difference whatever in the chickens so hatched, from ordinary barn-yard ones, except what may arise from modes of rearing, &c. Without in any measure impugning the veracity of this ingenious experimenter, the testimony on the point at issue, of a less interested witness, would be desirable. As to deformities, many cases of *cross bills* occur in his hatching establishment, but monstrous formations, we suspect, must be rather attributable to causes irrespective of the *modes* of hatching.

The Egyptian management is as follows. The proprietors of hatching-ovens collect fowls' eggs from the village peasantry, which they give in charge to the rearers, who lay them on mats strewed with bran, in a very small oven,* four feet high, directly beneath a chamber, of the same length and breadth, but with a vaulted roof, about nine feet high, with a small opening in the middle of the roof, to admit light during the warm weather; and another somewhat larger, immediately below, communicating with the lower room by an opening in the ceiling, through which the attendant descends to examine the eggs; but in the cold season those openings are closed, and a lamp is kept burning instead, another entrance in the front part being then used for the man to pass in and out, and closed on his quitting the oven. The fire, inverting the usual order, is laid in the upper room, along two troughs, with earthen-slab bottoms, and in parallel lines, from the front to the rear wall. The eggs are placed in the lower room, in lines exactly under the fire-receivers, and left there half a day. They are then removed out of the line of direct heat to other parts of the room, and another batch is ranged in their stead, during the same number of hours, and so on, till all have had their equal share of the warmest positions, to which they are again and again taken in their turn, during six days. They are then examined one by one, before a strong light, to ascertain the appearance of the substance within. If this be clear, and of uniform colour, the egg has failed; but if it appears opaque, or shaded in colours, the organisation of the embryo has commenced, and these fertile eggs are replaced in their former warm places, with the same changes during four days. After this they are removed to another oven, over which there are no fires, in which they lie heaped up

* There is generally a series of these lower and upper chambers, on scales commensurate with the capital of the proprietor of the establishment.

during five days, the apertures in the roof and door being closed with tow, to exclude the air; they are then laid about an inch apart over the mats, and lightly strewed with bran, for about a week longer. They are continually shifted about on the mats, the external air being carefully kept from them, and frequently examined by the attendant, who tests them in a curious way—by applying them one by one to his upper eyelid: if they be cold, the chicks are dead; but if warmer than his own skin, they live. The temperature is not less than 88° Fahrenheit; but the average temperature of the chamber is kept under the natural heat of fowls, which is about 104° Fahrenheit.

The chicks come forth gradually, at the usual time, which is the twenty-first day, but some about the eighteenth, from the thinness of the shell, or, perhaps, as we conjecture, from certain favourable conditions of the atmosphere, or the relative staleness or freshness of the eggs previously to their commencing the hatching process; or from the high degree of temperature constantly sustained. Chicks appear frequently at Cantelo's on the eighteenth or nineteenth day, the temperature there being 106°. And this we should have supposed to be too much of a forcing heat, likely to produce animals, corresponding in delicacy of framework and constitution to exotic plants raised in hothouses too highly warmed, weakly and etiolated in consequence. About two-thirds of the eggs prove fertile, and of these the proprietor of the ovens and the contributors of the eggs have each one half.*

The Chinese method of hatching *ducks* is more simple. This has been described by a traveller.† The building is merely a straw-thatched shed, at the side, generally, of a cottage. Straw baskets are ranged along the ends and one

* Wilkinson's "Topography of Thebes." † "Fortune's Wanderings."

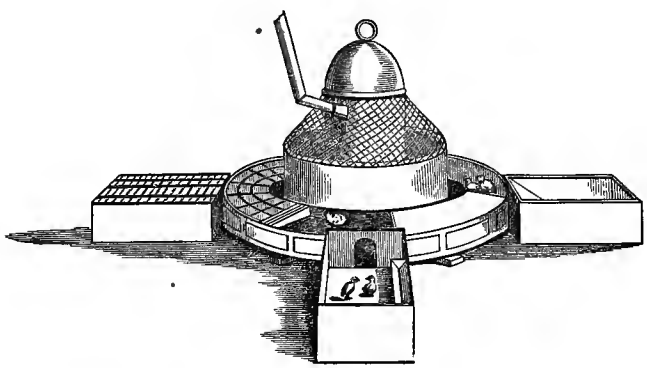
side of the shed, and plastered with clay to render them incombustible, and a tile forms the bottom, beneath which a small fire burns. A straw cover is placed over each basket during the process. In the centre are wide shelves over each other, to receive the eggs, at a certain stage of the operation. These being placed in the baskets, a fire is lighted, and a steady heat, between 95° and 102°, but regulated by no better thermometer than the sensations of the attendant, is kept up. As in the Egyptian process, the eggs are taken up, after undergoing for a few days the first heating process, one by one, through holes bored in a door, and nearly the size of the eggs,—the unfertile ones, of course, are rejected. After nine or ten days more, the fertile eggs are removed from the baskets, and spread on shelves covered up with cotton or some similar substance, but without fire underneath, and thus they remain during fourteen days more, when the ducklings burst their shells; and in two days afterwards they are sold and carried off.

Mr. Barrow has informed us, that the Chinese who live in their boats on the canals and rivers, hatch eggs by bedding them in sand laid in wooden boxes, placed on iron plates, kept heated at a moderate temperature. The Egyptian method was tried at Amboise, by Charles VIII., at the end of the fifteenth, and by Francis I. in the sixteenth century,* Olivier de Serres notices a portable metal oven, in which feathers enveloped the eggs, and which was heated by lamps. This was a failure for practical purposes. Réaumur improved

* The expenses of which are thus detailed:—"Paid to Messer Nicolas Vigens, an Italian, for fourteen days, employed in working an oven for hatching and rearing chickens without hens, which he has done for the king's pleasure, during this time, at the rate of four sols two deniers per day; and has been paid, as appears by his receipt, the sum of fifty-eight sols four deniers."——"To the said, the number of 1,300 eggs, by him bought at the aforesaid time, in order to have them hatched, and to have chickens for the said, at the rate of four sols two deniers per hundred."

upon this: he put eggs, arranged in drawers, over a baker's oven, but afterwards used stoves. It is rather remarkable that this really scientific man, the inventor of the thermometer which bears his name, has given an old woman's rule for testing the degree of heat to be maintained in the ovens, instead of marking the degree with dogmatical precision: he says, that a thermometer may be dispensed with, —that a bit of butter, the size of a walnut, with half its quantity of lard, will, if put into a phial, indicate the proper temperature, by liquifying.

Réaumur excited a spirit of philosophic inquiry and experimental mechanism for the same purpose, which led to the substitution of *hot water*, instead of the dry heat of M. Réaumur's ovens, with ventilating flues, and vessels of water in the hatching-room, to moisten the air, so that it may assimilate with that under a sitting hen.*



This cut represents the neat and simple apparatus which he contrived.

As to the necessity of this moisture, the most modern London experimenter, to whom we shall soon refer in due course, has stated, that a fowl does not sweat, but, like the

* "L'Homme Rival de la Nature."

dog, throws off a quantity of moisture from the mouth, from which a small drop of moisture may be seen to fall.* Yet M. Parmentier considered this moisture necessary to sustain the condition of *damp* animal heat natural to the sitting hen. This involves a question for deeper physiologists than we are.

About twelve years ago, we examined, in London, Mr. Bucknell's apparatus, with a sonorous Greek compound name, for hatching. The exhibition was extremely interesting, but it has not, to our knowledge, led to any beneficial results.

The experiments of M. Réaumur, who invented the thermometer which bears his name, have thrown much interesting light on the subject of hatching. He considered that 32° on his thermometer (96° in Fahrenheit†), was the necessary degree of heat,‡ and ascertained that stoves placed in bakers' ovens, or heated with fermented dung or tan, would hatch broods: eggs kept at such temperature for the requisite number of days, by any means, would hatch. Any bird-warmth, however, of equable and continuous temperature, would more naturally, and, therefore, more effectively, it may be assumed, produce the effect. But there is far more difficulty in providing animal§ *brooders*, or nurses, other than strictly natural ones, than in setting

* Cantelo.

† This simple rule will enable any person to compare the degrees on Réaumur's and Fahrenheit's thermometers. Take any degree marked on the former, multiply the number by 9; divide by 4, and add 32 (the freezing point on Fahrenheit): the result will be the corresponding degree on Fahrenheit.

‡ Other philosophers have given 90 as the right degree.

§ Though it cannot be received as truth, or as throwing much light on natural history, the anecdote told by Pliny (X.lxxvi.), of Livia, while the wife of Nero, is amusing, at least. When in the family way, she was very desirous of male offspring, and hatched an egg in her bosom *for an augury;* and successfully. When the chicken came to light, it was *indigniter cristatus*,—it had a villanous comb.

inanimate pieces of mechanism to work out the same purpose. After teaching capons to be useful in their generation, by sitting on eggs and nursing great numbers of chicks afterwards, clucking, like hens, to call together the straggling chicks, and showing them how to scrape and peck, he thought it better to substitute bottomless boxes, lined with furs, which kept the chicks in a sufficiently warm and comfortable condition, which he termed artificial mothers. But what contrivances of this sort can properly supply the care and warmth of living parents, with instincts to guide and teach their imitative broods? That the male birds of many species of poultry have not only nursed broods, but also hatched them, is undoubted. Facts might be given in illustration in an endless succession, from Aristotle to one of our own living friends.

The hatching apparatus, which Mr. Cantelo names a Hydro-Incubator (water being a principal agent), is either fixed, and on the scale described in the plate, or portable, and varying from four to six feet in length, and upwards, but of the uniform width of two feet, and height of two feet eight inches. These machines are designed to hatch 100, 200, 400, and 600 eggs.

The principles on which Mr. Cantelo has formed his hatching apparatus, as explained in his pamphlet, differ from those of the preceding experimentalists in two important points. First, the degree of heat to which the eggs are uniformly subjected in his INCUBATOR is much higher than even the maximum of temperature maintained in the Egyptian, or any other methods, whether ancient or modern. Instead of the comparatively moderate heat of from 96° to 98°, which was supposed to be the blood heat of fowls, as it is of the human race, this ingenious person asserts, that their blood heat is nearly 106°, and at this standard, as nearly as possible, he keeps the heat in his apparatus. Taking a hint from the

position of the hen while hatching, he places the warm medium (which is a current of hot water flowing over glass) above the eggs, which are placed in trays immediately under the glass, and in contact with it, but with space between it and the sides of the tray sufficient to admit air entering from

beneath; through a coarse sheet of canvass, which forms the bottom of the tray, and which the author compares to a spring-bed. To imitate the natural process by the hen, the eggs are gently moved three times in the twenty-four hours, and daily taken out and allowed to cool during as many

minutes as a hen ordinarily is off her eggs while feeding: during this short space of time, the eggs imbibe a fresh supply of vital air. A tray of eggs modelled in wax, demonstrates the anatomical progress of the embryo, from its first appearance to the breaking forth of the perfect chick from the shell; by which it may be seen that the embryo, from the commencement, has its position towards the upper side of the egg. This is probably caused by the influence of the heat above it,—as the plumule of a germinating plant will strike upwards, by the influence of light.

Anatomists, by the aid of a magnifying glass, have minutely traced the organisation of the germ contained in the egg; we may notice some of the progressing developments, without dwelling on details that have no special interest to ordinary minds.

The usual mode of examining the progress of incubation is to gently fracture the shell, and pick it carefully off in pieces with a forceps. "This should be done at the large end, as it is there the changes commence, and at all periods it will be found the most convenient for breaking the shell, on account of the air-cell being interposed between it and the fluids of the egg."

After twenty-four hours, the embryo (which had been some hours perceptible) will appear larger at the extremities than at the middle, and upon opening an egg now, the space for the admission of air between the layers of the membrane which lines the shell, will be found a little increased,—the yolk floating higher in the albumen, and a little flattened upon the upper surface; and the tracery of two veins expanding in the embryo will be distinguishable, which Mr. Cantelo compares to the small incipient roots of a plant: "these make their way towards the small space at the butt of the egg, coming in contact with the atmospheric air

contained therein, through the intervention of a very thin membrane, as in the lungs of any animal."*

About the third day, at farthest, red vessels appear, and the whole of the inner surface appears covered with a beautiful web or netting of veins or arteries. About this time, he examines the eggs, to reject those that are unprolific. The pulsation of the heart is perceptible on the third day, the space for admitting air increases, the yolk becomes more expanded, and the white falls still more to the lower parts of the egg.

On the fifth day, the limbs may be seen occasionally to move, and the heart undergoes some changes.

At the end of the sixth day, the weight of the egg, from the enlargement of the air-bag, will be found to have diminished considerably, and the shell to be drier, less clear, and more brittle; and the chick will be sometimes found on its back, instead of resting on its left side, as before.

At the end of the thirteenth day, the head is much curved, and the bill is coiled under the right wing, which position it retains until the chick is born.

A regular though slower progress is daily taking place, the different organs coming nearer to perfection, until the eighteenth day, when the chick is fully sized and formed.

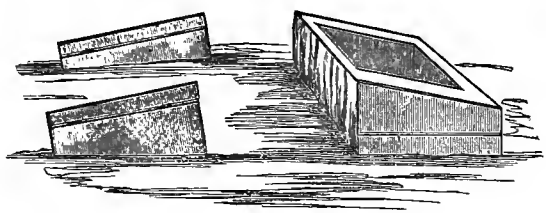
The nineteenth day, the air-bag extends round half the interior of the egg, and from this time to the twenty-first day the young bird may be heard to cry, and the greater part of the yolk will be now absorbed, by a membrane which serves for this purpose, into the belly of the chick.

On the twenty-first day, in the usual course, the brittle shell will be punctured at the large end, from within, by the little pickaxe of the prisoner, which protrudes through the orifice, until the little creature has acquired strength and

* See Rees' Cyclopædia for a lengthened anatomical description.

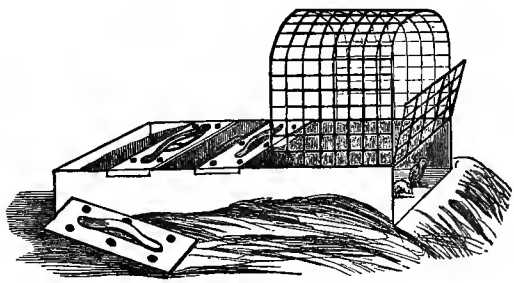
breath after its exertions sufficient to enable it to work its way out.

Before the natural process of rearing poultry is commenced, the artificial structure for imparting warmth and protection to what may be considered orphan chicks—under which denomination we would include goslings, ducklings, and every other sort of domestic poultry artificially hatched,—must be noticed. These wooden houses, or wicker-walled cages, are in effect comfortable asylums for the young, whom circumstances have deprived of parental nursing and training, and thrown into a peculiar state of ornithological society, to which their early habits must be accommodated.



M. Réaumur contrived, among other plans, a box resembling in outline the frame of a miniature garden hot-bed, which he called an artificial mother, that protected them from rain or cold wind, or too much sunshine, and kept them in warm air, but did not at first communicate any gentle pressure, such as a bird imparts by her body and wings to the backs of the little ones while grouped closely under her, whereas (we give the substance of Réaumur's explanations) their bodies often rest the while on the cold moist earth, reversing what took place in his apparatus, which warmed the feet first, and of course acted in a manner which is unnatural

to poultry. The chicks gave him a hint of their instinctive sensations by turning their backs to the warmest end of the box, to obtain the desired warmth. He then contrived a box sloping like the pit, and lined with sheepskin, which he placed at the end of a sort of a cradle, shut in with a network grating, within which the little birds could walk round the sides; and as if he imagined that the taller birds would stand in the rear, or increasingly higher parts, like spectators in the pit of a theatre, leaving the front to the shorter birds, he gave the inclination to the roof accordingly, considerately



affording a way of escape for each and any of the weaker inmates, who might be pressed too closely by the others, and smothered. And to prevent any from jumping on the backs of the others, he limited them to a roof so low that they could not practise gymnastics of this nature. So enamoured was M. Réaumur with this contrivance, that he fancied it was better than the natural mother. "The chickens," says he, "soon showed me how much they felt the convenience of my artificial mother, by their fondness for remaining under it, and of pressing it closely. As soon as they had taken

their little meals, they were seen jumping and running about; and when they began to be weary, they crowded to this mother, going so far in that they were obliged to squat, as I perceived by the impressions of the backs of several chickens on the woolly lining when the cover was turned up. No natural mother, indeed, can be so good for the chickens as the artificial one [we totally dissent from him], and they are not long in discovering this. Chickens direct from the hatching-oven, from twelve to twenty-four hours after their escape from the shell, will begin to pick up and swallow small grains or crumbs of bread; and after having eaten, and walked about a little, they soon find their way to the fleecy lodge, where they can rest and warm themselves, remaining till hunger puts them again in motion. They all betake themselves to the artificial mother at night, and leave it at daybreak."

M. Bonnemain substituted warm water in pipes for the flannels and wool previously used in the artificial mothers; and it is by the same agency that Mr. Cantelo keeps up the desirable warmth for his young brood. In the cut, descriptive of his Incubator, may be seen (p. 30) the parallel rows of pipes, an inch and a quarter apart, and resting on supporters five inches above the floor, beneath which the little birds can stand with their backs touching the pipes. A sliding board, on which they stand, can be gradually raised so as to allow them head-room under the pipes as they grow in stature.

Gallinaceous hens manifest their desire to sit by a clucking noise, searching for eggs if their nest be unprovided with them, and by a general restlessness and state of fever. This desire, which is termed *storge*, is so strongly felt in many cases, that it is both useless and uneconomical to oppose the longings of the poor bird to incubate. If she be anxious to sit at too early or too late a season for bringing

sorts chickens of her own sort with reasonable probabilities of success, let her be indulged by placing duck eggs under her, as ducklings with fair attention are hardy enough by nature to bear the raw temperature of early spring or very late autumn, when the young of more tender poultry would have no great chance of thriving. It is but the loss of a few eggs at most, if the brood should fail, and the instinct of the hen will have been satisfied. The eggs of the more delicate and valuable poultry should not, it is obvious, be intrusted to any hen at unfavourable seasons; but though a failure with respect to them might be expected, if incubated too early or too late in the year, neither loss of eggs nor of the hen's time would be much in risk if the eggs of hardy races were afforded to her.

The domesticated fowls most distinguished as mothers, if allowed to hatch—as they ought to be,—will bring forth at least two broods in each year. They will often hatch a third. We have had such experience this season of the recklessness and bad economy of refusing eggs to the anxiously expressed solicitations of hens for them, that we shall never do violence to their feelings in this respect again. Two hens of the Cochin-China breed brought out two broods each; after three or four weeks of happiness passed in nursing the latter, they began to lay in August last, and after laying a sufficiency of eggs, began to brood towards the end of the month, and took possession of such corners as pleased their fancies; and there they sat unprofitably, day after day, in spite of every effort to disturb them. Banished from those places, they sought others, and notwithstanding some doses of jalap and low diet to allay the hatching fever, and worrying stratagems on our part to prevent them from sitting on nests, they continued with few intervals to labour under the *storge*, until the middle of October. Among other cruelties, we tried

confinement in a coop barred at bottom and elevated from the ground; they sat on the bars, like "Patience on a monument," for two days. We took them from their nesting-holes in the dead of night, and placed them, in their drowsy state, on a roost five feet above the earth; and there they remained two days more, having found the diameter of the bar sufficient as a rest to their bodies—as the drivers of old-fashioned Irish post-carriages contrived to sit, apparently quite content with the narrow board which served as a seat for them, when they were not standing for the purpose of flagellating their unfortunate backs, until in ~~nity~~ we removed them:—the gallinaceous voices to which they had been accustomed in their limited poultry-house, did not seem in any measure to disturb or excite them.

It appears, however, that unaccustomed society with new voices and languages may have the desired effect. Mr. Bissell placed such troublesome hens in an aviary for a few days, and on short diet; they gradually ceased clucking, and were no longer affected by the hatching fever.

Now, if we had not assented to the judgment of a cabinet council of old women, who resolved that it was injudicious to weaken the constitutions of the aforesaid hens by allowing them to sit a third time in the year, and considered success in rearing such late broods very doubtful, we should almost certainly have been counting our chickens before the end of September, when the weather was very propitious; and the chicks would now be progressing, and likely to bring high prices at Christmas. Duck eggs, however, would have been still more likely to come into profit.

Each of our hens sat on an empty nest, in defiance of her tormentors, who took them off regardless of their frantic cries and tottering gait, as they rushed headlong in a state of delirium more days than would have sufficed for the produc-

tion of a brood, and suffered in mind and body, and after all had no joyful maternity. They ate very little while affected by the fever, and their poor brains while under its influence (which caused stupor, or dreamy agitation, like the state of a drunkard just beginning to recover consciousness) suffered so much that the wear and tear of their constitutions was great. They shall hatch as often as they may please next year.

Young hens that have moulted early will occasionally evince a desire to sit even late in October; and where there is dry and warm accommodation for their broods, these may be sometimes very profitably bred. The value of chickens in the early part of the year being so considerable, it is worth while to run some risks for the chance of obtaining 7s. 6d. or 10s. a couple for them.

Eggs for incubation should be as fresh, if practicable to procure them so, as they would be in the natural course of laying before incubation, by the parent bird. For instance, a hen of the gallinaceous kind, and of a family disposed to brood, will lay on an average from twelve to fifteen eggs, and then cease in order to hatch them. Three weeks we think may be stated as the longest period during which such eggs should be kept for hatching, unless under peculiar circumstances, and with the care recommended in a preceding part. A pigeon will lay but two eggs before it sits; therefore, a pigeon's egg should, if our notion be correct, be quite fresh for hatching. Much depends, no doubt, on the thickness of the shell, as the embryo will sooner lose its vitality, and decay and decomposition will take place sooner in thin-shelled eggs than in those which are less penetrable by the air. It will be right in most cases to mark on each egg intended for incubation, the date of its being laid, so that a proper limit of time shall not lapse before it is placed in the hatching nest. And all the precautions already suggested for

preserving eggs that are unavoidably long kept, should be taken—such as laying them in substances that are not contractors of heat, oiling them, &c. And when eggs are placed under birds of a different order from those which have produced the eggs, due care should be taken that eggs of a thin shell should not be placed under hens too heavy for them, and therefore likely to break them. A light hen, however, may sit on very large eggs: geese and turkeys have been hatched by ordinary hens. The Creator, who has constructed the thickness of a shell to the strength of the chick which is to break its way through it,* has not designed that it should bear the excessive weight of a hatching bird of a much greater weight than that of the parent of the egg.

It is of course safer and more judicious to have the eggs of our own poultry-yard for hatching, than to depend on any that have been purchased, lest they should not have been fecundated. Yet Mr. Dixon suggests, as an amusing speculation, the purchasing of eggs at random from the wives of small farmers, and setting them under several hens, in order to have a great variety of chickens, from which a judicious selection for breeding, from neglected varieties, might be made.

Being very doubtful of the advantage of such crossings, we would prefer keeping races distinct, and only hatch the kinds we specially desire to have. As nurses, indeed, we must often employ those of a different class from the producers of the eggs to hatch them; many races of fowls, like some fine ladies, leaving the nursery work to subordinates. Ducks' eggs, for instance, are often advantageously hatched by the common hen, and these are sometimes mixed with hens' eggs, allowing a due

* What would become of a brood of Guinea-fowls' chicks, if enclosed in the shell of an ostrich, which is thicker than china, and almost as hard?—JENNINGS.

difference of time between the hours of setting the respective kinds; but in this case there is no confusion of families, the duck and the gallinaceous fowls being distinct in genus and species.

The eggs for hatching should be the largest and best-formed of their kind, and if an egg of a rare and valuable sort should have a defect in the shell, Mr. Cantelo says "it may be worth while to gum a piece of paper over the part affected, as it is through the extra evaporation that it would otherwise fail in hatching." Mr. Dixon waxed up a hole in a duck's egg, accidently broken by a hen within a week of hatching, and the duckling came out quite lively, and proved to be the best of the brood.

What are called double eggs are not very unusual; they are large at each end, and have a rim like a welt round the centre. Twins arise from these. The following is given as a remarkable case by Mr. Alfred Whitaker. Two live chickens were brought to the hatching point, but were not actually born alive, but this showed that the egg in question was a twin egg. Mr. Dixon, to whom this communication had been made, considered it so remarkable a case as to have deserved preservation in a museum. But we can adduce a stronger case:—A lady, on whose veracity we can implicitly depend, assures us that she had twin ducklings, perfect in every part, and which were reared by herself until they were three weeks old. These were hatched by a duck in a hedge, from which she was not seen to emerge during the whole period of her sitting, but probably she came out sometimes at night; she had fourteen eggs, and twelve chieks were born in due time. If the lady had been then aware of the singularity of the case, she would have paid particular attention to their future growth and progress. The remaining egg, after the other tenements had been vacated, was only remarkable in

being long "billed" (in the provincial term of Kent) at two places. The nest was left until evening, when the two black spots of the morning so increased that two protruding bills could be plainly seen. Very little, if any, assistance was given to them at their birth; they issued forth a day later than the others, and in no respect differed from them, except in being a little smaller and less lively.

It is a common practice to put ducks' eggs under a hen, yet it is a cruelty to the nursing mother, who suffers great alarm at every approach of the ducklings to a pond or stream of water, in which they instinctively delight. But an extraordinary case, of recent occurrence in our neighbourhood, tends to show that the instincts as well as habits of the nurse may be communicated to the progeny she rears, however different they may be in natural propensities.

Two Aylesbury ducklings were hatched by a hen among a brood of chickens; one of the former was killed, and the hen deserted the other. A second hen more amiable received it under her wings; it grew up, and would not associate with any of its own tribe in the yard; and when carried to a pond with other ducks, scrambled quickly out, and at two months old was still terrified by the water, and accompanied its stepmother continually.

The fancies which a hen will sometimes take in the arrangement of her nest and eggs are curious, and apparently very crochetty. We placed a hatching of eggs for a Cochin-China hen, in a corner of a fowl-house, and in the course of a few hours she moved every one of them with her bill, without injuring any, from that corner to another on the same side of the chamber, and without any motive for the preference that was discoverable.

The best nests for hatching hens are shallow baskets (the lower parts of old beehives would make a good enclosure for a

turkey, goose, or any very large bird), with sifted coal-ashes laid at the bottom, under fine hay or short soft straw, as preventive of vermin; and the filling altogether should be sufficiently high to allow the hen to go in and out without disturbing the eggs, and yet so depressed, that the eggs shall be in no danger of rolling out. Some hens, as the Cochins, will sit without trouble wherever a nest is prepared for them; others it may be difficult to please, yet they must be indulged in their caprices. If their removal from one place to another be necessary, nightfall, or after it, is the best time for doing so, as hens are not easily agitated at that time.

We use the feminine gender here, for though the males of gallinaceous fowls have been induced occasionally to hatch, and the single-mated males of some of the feathered tribes are sometimes perceived to discharge the tender office of, at least, a temporary nurse, the polygamous cock of the poultry-yard, whether Pole or Spaniard, Chinese, Indian, or Polynesian Islander, rarely condescends, and never, we believe, without some gentle compulsion or strange discipline, to do so.

Of the poultry to be noticed by us, the periods of incubation are, for

Fowls' eggs, 21 days, but sometimes the brood is out one or two days sooner, or a day later.
Turkeys' „ 31 to 32 days.
Geese „ do.
Ducks' „ do.

Of these we need only here give the details of hatching, as exemplified in the first and most important class; the general principles and instincts affect the others in a similar manner.

Long-legged and narrow-breasted hens and pullets, and those that want expansiveness of wings, are ill adapted for

hatching, however valuable they may be for laying only. If they are not decidedly good for either purpose, they should be fatted for the table. The incubating disposition of untried birds should be proved by some days' sitting upon nest-eggs, before a hatching of them is intrusted to them.

From nine to thirteen eggs is a sufficient number for an ordinary-sized hen to have. There never should be more than the sitting bird can cover entirely, and without any inconvenience in posture, else those on the outside of the circle will not receive their due degree of warmth.

A deficiency in this respect may possibly occasion some of the deformities with which chickens are now and then born; their organisation may be rendered imperfect from want of full heat, and the weakness which prevents unfortunate chicks from liberating themselves at the same time with their brothers and sisters, which come out, it may be, twenty-four hours sooner, and which sometimes prevents them from appearing in public at all, is surely attributable, in many cases, to the want of heat as regards them. And though a hen will sometimes turn the eggs beneath her, it is very improbable that she either would, or could, bring those on the outside of the hatch to the interior. By marking the upper sides of eggs, when first arranged by the hen to her satisfaction, and observing afterwards the changes that may be made in their position, and noting them regularly down, any person may learn how far, and at what stages of incubation, eggs are instinctively moved by the hen.

The old writer Mascall advises,—"If the henne be negligent to turne her egges, and do not sit close or even on them, it were good sometimes, when she is gone abroad, gently to turne them," as if the hen were not the best judge of her own proper business; yet, out of 100 turkeys' eggs, which were turned daily by an over-zealous person, during

the period of hatching, ninety-nine were productive. That the result would have been otherwise if the eggs had not been meddled with, we have no means of judging: but this officiousness certainly did no mischief, and rather indicates that turning the eggs is natural and necessary.

Mr. Cantelo *moves* the eggs on the trays of his Incubator gently three times in the twenty-four hours. How far they may be *turned* is left to conjecture. The front of the bird within being always turned to the uppermost side of the egg, it is an interesting question whether it will always, like the needle in a compass, move according to its natural tendency, if the egg be made to perform rotations? Mr. Cantelo admits that, by his artificial system, deformities will occasionally occur, when the temperature is too low. Eggs, therefore, which are placed beyond the limits of the full heat radiating from the hen, will be likely to produce deformed or very weak birds. It is therefore a great mistake to make the circle of eggs too large, with reference to the circumference of the sitting bird.

If a hen be naturally disposed to rise from her nest every day, or even every second day, she should not be meddled with; but if, as is often the case, she does not leave the nest to feed, she should be taken from it, about the same hour once in every twenty-four hours, and fed on good raw barley or oats, which will not digest too fast. Cobbett has pointedly said, "though a hen hatching does not give milk, she gives heat;" to sustain this heat, high feeding is necessary, but it rarely happens that a good brooder will remain longer at her food than is merely sufficient to satisfy the cravings of hunger. After picking up some grains, drinking rather freely, stretching her legs repeatedly, enjoying a bath of dry ashes for a short time, she, satisfied as to all her physical necessities, hastens back to the nest, from which she has

unwillingly absented herself. Some giddy pullets and unsteady hens will not always return to their nests within sufficiently short time without difficulty. It may be best to leave such irregular brooders on the nest altogether, as long as they will sit contentedly, with corn and water near them; their food should be removed, however, when they have partaken of it; and certainly many species of poultry, for instance, pea-hens and ducks, after sitting in secret out-of-the-way places, where they have not been fed by human care, will unexpectedly come forth with their broods in due time.

The position of the little ones before their emancipation from the shell, is the most convenient for their housebreaking labours, their upper part being coiled up towards the larger end, and their bills inclined upwards, with a hard horny point about the size of a pin's head at the end (analogous to the steel point of an iron bar or pickaxe), which after use disappears in some mysterious manner.

If the chick should not have found its way out at the proper point of its prison-house, which is rather towards the larger end, and to which the bill should naturally be directed (the chick gradually moving from left to right as it opens the way out), it may be vainly battering in a wrong direction, from some false position, in which case, also, it must be aided by the fracture of the shell with the point of a pair of scissors, or some convenient implement.

In the fowl tribe, which serves for our particular illustration, the chicks ought to be all out on the twenty-first day, or a few hours afterwards at farthest; those which are later will be found weak and good for nothing, unless their detention in the shell has been caused by the adhesion of the skin of the membrane to which the feathers are attached. Of this they will give notice by their cries. In such case, which

very rarely occurs, they must be assisted, but so gently that the tender membranes of the skin shall not be lacerated.

Inexperienced or over-anxious persons are too apt to interfere precipitately in cases of this kind, thinking either that the natural operations are too slow, or that some obstructions are occurring, while everything is going on surely and rightly, though it may be a little slowly. The instance of the twin ducklings, related in one of the preceding pages, is a case in point. The proper hour of birth had passed by some hours—the remainder of the brood had burst through the tender enclosure within which they had received vitality, gradual development, protection from external injury, and the nourishment so marvellously and with such beneficence provided for their sustenance, until the wide world, teeming with other sorts of food, adapted to their new condition of life, should open to their view. Our friend* did not anticipate nature's process, nor interfere in any way in what was going on, and the result, as we have seen, was favourable, and that, too, in a case of double birth, in which, if on any occasion, some degree of manual assistance might be considered necessary, or at least allowable.

HATCHING.

When hens have not shown a natural desire to brood, various inhuman stratagems and practices have been resorted to by persons ingenious in the art of tormenting. Among these, a French lady, named, oddly enough, as will be seen, *Portebois,* has acquired an unenviable fame. She contrived a cage, so narrow that the hen could not turn in it, and when placed on the eggs (which she had no desire to hatch), a piece of wood, half a pound weight, was tied to the hen's tail, so as to cover her back. To add to her miseries, she was left in darkness. The weight on her back, and the

* See p. 40.

absence of light, broke her in, after a few days, to this work, which was a sad contrast to a free ramble in a field, scraping up game in the form of worms and insects, and making love. This inventive scheme of Mademoiselle Portebois, attracted the attention of the French *savans* of her day. One of the commissioners of the French Institute was sent to report upon so great a discovery. The report stated:—"I have witnessed the experiments of Mademoiselle Portebois, and I have had good reason to be satisfied with the results. A hen was made to sit two or three times in succession, and a turkey four times: the chicks, as soon as hatched, having been removed to other mothers. I ought to mention that these fowls were not affected with the peculiar fever exhibited in natural hatching."* The last sentence proves the especial barbarity. The poor hen was not naturally disposed to sit, and was unnaturally compelled, by the closest imprisonment in a dark cell, and with a heavy load on her back, to assume a posture which to her was crippling and painful; and this for five or six days, until her legs were bent into the desired form. Our "London Society for the Suppression of Cruelty to Animals" would have recommended a little confinement, and of a far more irksome character, to the lady, who, if ennobled, ought to have borne for her crest a bar of wood, on female shoulders, which, like the bar sinister, would have been for ever a reproach to the family of Portebois.†

Remember that, if the chickens leave the shell before they have taken in, or drunk up all the yolk, which must serve them for food during the ensuing twenty-four hours after they see

* "Encyclopédie Méthodique," *Poule.*

† Only that this name is mentioned before the examination and report of the commissioners, we should have supposed, from its singular appropriateness, that it had been given to the lady as a *soubriquet* explanatory of her invention—*Portebois* being literally *Wood-bearer.*

the light, they will pine away and die in a few days. Beware, then, of being premature in any efforts, however well-intentioned, to extricate a feeble chick; nevertheless, be watchful, and ready for every emergency.—So far we may say an experienced poultry-maid would give her directions. But now comes another point to be considered. The chickens are all hatched under favourable circumstances; there is no mishap; one after another extricates itself—what is the treatment to be pursued? Many persons, as the chickens leave the eggs, remove them one by one, and place them in a basket, covered up with flannel, and keep them in a warm place, returning them to the hen when the last has made its appearance. This is not generally necessary: it is unnatural, and may fret the hen, who delights in her young brood, whose piping notes, while the chicks were yet in the egg, she has listened to with complacency. The shells, however, should be cleared from the nest; but unless circumstances render it necessary, the young chickens may be allowed to remain. But suppose that the weather is piercingly cold, and that the hen is restless, then let the chickens have warmth and every attention. Chickens hatched during the winter months require comfortable housing, the hen being with them, and the less that interference be made between the hen and her chicks, the better; they troop around her; she protects them, gathers them under her wings, and watches over them with the most earnest solicitude. As we have explained, the chick, before its exit from the egg, has absorbed nourishment intended to last for twenty-four hours. If the chicks look healthy, if their downy plumage soon spreads out, and if they gain their feet pretty soon, even though they should not eat, nothing is to be apprehended. In fact, their abstaining from food only indicates the little need they have for it.

When several hens (Turkeys in particular) hatch at the same time, if any accident should happen to one of them, her eggs may be distributed among the others, provided they had not too many eggs in the first instance. Nightfall, or when the hens are off the eggs, is the usual time for making this transfer, lest the hen should be surprised or dissatisfied at receiving them. But of this there is little danger, as brooding hens are always pleased at having a large number of eggs under them, even more than they can conveniently cover; and if they have the power of choosing between nests that are very full of eggs, and such as have few, they will generally prefer the former. Instances are frequent of their stealing any eggs that may be near them, and adding them to their stock. Some advantage is gained by having two, three, or more hens sitting simultaneously: any of their broods may be removed, immediately on their birth, to another hen who will act as their fostermother, while the bereaved one may be continued at the work of incubation until she has hatched a second time. This, however, cannot be recommended on a humane principle, as the hen on whom this double labour is imposed will suffer much exhaustion in this case; yet economy may render such a practice prudent when a very small brood has come forth, to remove chicks from a hen in this way in order that she may lay again.

The eggs of fowls are often put under a turkey, either with or without eggs of her own kind; but a mixture of this kind has many objections and disadvantages, among which even supposing them simultaneously hatched by previous accuracy of calculation as to the days on which the different classes of eggs should be put in the nest, there is this serious one,—the distraction of thought the hen may experience from the different instincts of the individuals of her brood. She will not know how to divide her maternal affections.

The laying of the turkey ceasing much sooner than that

of the gallinaceous hen, the earliest chickens may be obtained by putting fowls' eggs under a turkey hen, and as these are hatched ten days sooner than those of the turkey, the latter has an abridged period of incubation, and may, without injury to her constitution, obtain leave to sit again in the course of the season, if she is not wanted to lay more eggs.

The hatching of the goose eggs is often discharged for her by deputy—by a common hen or turkey, in order that her laying of valuable eggs may not be interrupted. The turkey is indeed more desirable for hatching than the common hen, as she can cover so many more eggs, and is naturally disposed to sit as long as the goose occupies in incubating.

The period of the duck's incubation is about the same as that of the turkey and the goose; she cannot, however, cover more than eight or ten of her own eggs, and rarely lays more in one course of laying than are sufficient for a hatch. From the superior care bestowed on her broods by the common hen in keeping them away from damp places and pools of water, which are very prejudical to ducklings for the first fortnight, it is common to put duck eggs under one. The result, however, causes her much misery; when she sees her young brood rush into water, she is instinctively terrified. Add to this humane consideration that a week longer of confinement than the due time of incubation is imposed on her in this case. Yet as Aylesbury ducks, for instance, will seldom hatch, some fostermother must be substituted for them, and the hen will be the best.

The eggs, too, of curious and very scarce sorts of poultry, may be obtainable when the birds that produced them cannot be purchased; or, if obtained, will not, from their wild and peculiar habits, incubate at all. In such cases, the hen of the fowl or of the turkey tribe will be the obvious and necessary resource.

When nurses are to be thus provided, they should be

tried and experienced ones, steady sitters, and possessing all the good qualities requisite for fully discharging the office committed to them.

To revert to the fowl tribe as exhibiting the most familiar illustrations. It is most interesting to contemplate a hen with her young brood as she gives them their first lessons in the natural mode of obtaining food on the ground, as *rasores*, scratching with their nimble claws for seeds or insects, in emulous and rapid imitation of the movements of their instructress; while she, in the exuberance of her maternal pride, and the enjoyment of freedom of limbs after so long and close confinement in a cramped position, gives free play to her animal energies, rather awkwardly, but never intentionally, flinging dust in their eyes with her active feet; breaking into little portions food that is too large for them to swallow; and then, when they are tired with sportive play, or chilled by a passing cloud or threatening shower, or drowsy, gathering them affectionately under her distended wings and the soft downy feathers of her breast and body. If left to her own inclinations, the hen would take her chickens promenading with her very soon after their birth to the field or the dungheap, in keen and eager search for worms, or the undigested grains which stable litter yields. And yet if a dog or imagined enemy approaches, her maternal feelings and heroic courage are instantly manifested; the brood is, in a tender but peremptory and excited manner, summoned to her wings, beneath which they find protection, unless she is combating in their defence against the intruder, whom she unhesitatingly attacks with bill and beak though it be a giant in comparison of herself. Will this tender mother forget these objects of her solicitude? Alas! her instinct disposes her, perhaps suddenly, and with apparent capriciousness, to leave all this endearing and helpless family; she ceases to care for them; will not let them partake of the

food thrown to them in common; she who was so self-denying, so willing to starve herself for their sakes, now becomes a *gourmande*, and selfish to a shameful degree: she flies at them, pecks at their tender bodies, while, surprised and terrified at this unwonted treatment, they run in their confusion and fright to some retired spot where they may be safe from her violence, and can rest from their little sorrows. This estrangement of her affections is not to be overcome by night or by day. If they venture to the familiar resting-place, and try to nestle under the well-remembered and warm bosom, they are driven from it; her maternal love is gone for ever; the unsympathising parent flies to her roost, which the little ones cannot ascend, and their affectionate intercourse is thus harshly broken. But what may not importunity effect? We have seen some hen-mothers that had separated from their offspring at nature's appointed time, yet good-natured enough to allow the little ones, if not—

"To climb the knee, the envied kiss to share,"

to mount astride on her back as she stood upon some low perch. A short time ago we watched such playful movements on the part of some chickens that wished to nestle under their mother's body, while their brothers and sisters tried to crouch under her wings half distended, as if she had not made up her mind whether to reject their winning advances and endearing playfulness, or not. Thus encumbered she seemed perplexed, and at length, after supporting three chicks on her back until it seemed to bend beneath their weight, she descended to the ground, while they pertinaciously followed, and jumping on her back, were borne on it about the house until she was obliged to shake them off, and either rise to a higher roost or fairly give up the contest and let them occupy their old comfortable quarters as before. The bond of union is sometimes unbroken; for

instance, a hen hatched a brood of chicks which was removed soon afterwards, with the exception of one pullet. The hen began to lay in the course of about a month after she had hatched this brood, and the little chick regularly accompanied her to the nest when she retired to lay. The hen, after laying a score of eggs, desired to incubate, and was indulged in her longing. During the whole time of her incubation, the chicken remained near the poultry-house door, and occasionally went into the nest when the hen was out of it. But generally she followed her mother, with every manifestation of filial delight, displaying itself in the most amusing pranks, excited with animal spirits and excess of gladness; running before, behind, beside, on the back of, and underneath her mother. And when the new brood came out, this young pullet was a second mother to them, actually gathering a portion of them under her wings, and calling them about her in imitation of the parent. We are assured by a gentleman of great experience in poultry, that in several instances even his male chickens acted the part of nurses. This season one of his cockerels, three months old, allowed chicks five or six weeks old, and deserted by their mother, to nestle under his feathers.

Another hen, sister of the former and amiable one—both half-bred Shanghaes—at the very same time acted very differently. She seemed to take a pleasure in screaming at them, and chasing them from corner to corner with malignant fury. Such instances are very unamiable, but they are the result of instincts impressed for a useful purpose. Hens which remain long with their offspring neither lay nor incubate so often as those which nurse but for a short time, and as we are decidedly benefited by this ornithological usage, we must bow to the Superior Wisdom which has dictated the law of instinct in this particular. The tribes of fowls which are

of slow growth in chickenhood, such as the Shanghaes, are, as we should conclude, from the beneficence of our Creator, longer under the mother's care than the precocious ones, such as the Hamburgs, which at a very early age become independent of it.

Before we proceed with the management of poultry, in regard to rearing, feeding, and fattening in detail, it is necessary to provide the preliminary accommodation for them. The nursery itself should precede the system of nursing. We must have, in the first instance, something of a poultry-yard and poultry-house.

THE POULTRY-YARD.

The circumstances under which the different sorts of poultry are kept vary so much, that it is impossible to lay down plans and specifications that will suit all cases and requirements. We shall only call attention, then, to such economical and simple arrangements for poultry-keeping, as may be suitable to all persons possessing a little land, even a small garden, and space for the cheap erections of which we present two designs.

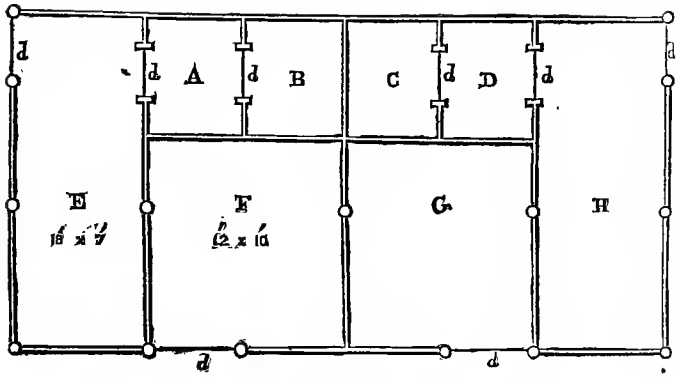
But, first, the deficiencies that exist in this branch of rural economics must be adverted to. Even in many large farm establishments, there is no suitable accommodation—for fowls in particular. These, though requiring warmth in cold seasons are often without full protection from the weather, left to find lodgings in open sheds, as they best can, and without convenient and retired places for laying and hatching, or a supply of pure clean water. The barn-door, indeed the straw-yard and stables, afford frequent sources of enjoyment and comfort to poultry by day, but at night, and often during the day-time too, there is a want of that accommodation which their habits require. The fowls may vainly seek a dry warm nook, and the ducks and geese a bathing-

place. Yet under the most unfavourable circumstances of this nature, poultry have a happy and free existence compared with those which are kept in very close and confined places, where neither a grassy field, nor gravelled walk, nor shady lane, are available to them,—penned up in some diminutive yard, or the corner of a citizen's garden, of which only an angle is appropriated to them. A clay sloppy yard, too, is sometimes the spot on which fowls pass their days, without sand or ashes for their toilet-service, lime rubbish to assist in the shell formation of their eggs, fine gravel to assist their digestion, or any contrivances to afford them the sunny aspect which their confined location might admit of.

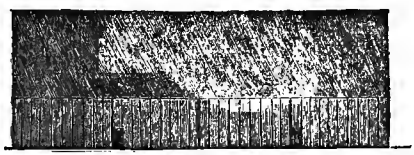
The plan of a fowl-house here presented for examination, is that which the Rev. W. Bond erected at North Heath, in Berkshire, on the verge of a fine dry sheepfield, admirably suited to the rearing of poultry, and yet not possessing any exclusive facilities for the purpose; for any person having a grass field or orchard close to his habitation, or even a very limited portion of land, may provide similar house and yard accommodation at little cost.

The plan was originally intended for four varieties of the Poland family; but it is equally suitable for any other fowls. It fronts the south, and is so placed that the inmates by turns can have free range over two acres of grass. The materials are such as can be readily procured in the country and easily worked up by any common carpenter. For the sides and ends, rough oak slabs have been used; for the posts, rails, and rafters, larch poles. The roof is thatched; the extreme length is twenty feet, divided into four equal compartments; the breadth is six feet; the height to the ridge pole, seven feet. Attached to the house, and on the south side, are four yards, E, F, G, H; of these E and H are for the use of the inmates of A and D; F and G are for those of B and C. The two yards, F and G, occupy the whole front of

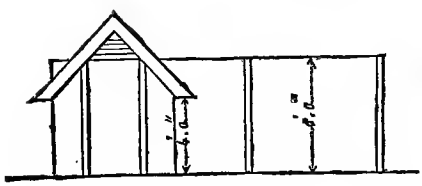
No. 1.



PLAN.



ELEVATION.



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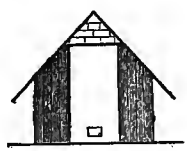
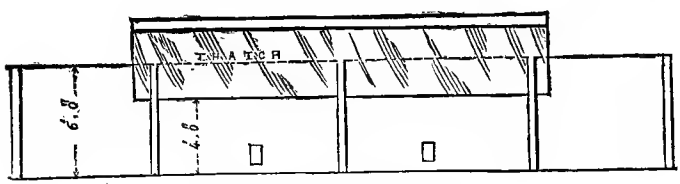


END SECTION.

Scale—one-tenth of an inch to a foot.



FRONT ELEVATION.

Scale—one-tenth of an inch to a foot.

the poultry-house. The other yards, E and H, are at the ends. There are small entrances for the fowls in each of the external doors, to A and D. Each yard contains an equal number of square feet; the house is entered at each end by doors five feet high and two feet eight inches wide. There are similar doors in the partitions between A and B, and C and D, but the partition between B and C, is boarded up closely to the height of the sides, four feet. Over each external doorway is a window as large as space will admit of, which can be open or shut at pleasure. Over the internal doors and the central partitions, and quite up to the rafters to which they are fastened, there is iron wire, through which perfect ventilation can be effected.

The floor is composed of chalk, rammed hard. The yards have about three inches of chalk for a foundation; over this gravel and chalk sifted (four parts of the former and one of the latter), and worked together, is spread to the thickness of three inches over that foundation. Where chalk is not obtainable, the foundation may be made of stones, and the gravel mixed with lime.

The yards are enclosed by posts and rails, the former being six feet above the ground. The north side is boarded closely with slabs the entire height; the other sides only to the height of two feet, as are also the fences between the yards; the remaining four feet are of laths, nailed three inches apart, with the exception of the south front, which is enclosed with galvanized wire. In each compartment are three boxes for the hens to lay in; and a box about two feet square is added for ashes, which the fowls so much desire to dust in. The whole forms a very neat rustic building, admirably suited for the purpose to which it is appropriated.

But even the liberty of range, and general unconstraint which fowls may enjoy in such cases, are, in some particulars, sources of annoyance to them, from which they would be

saved under confinement in a well arranged and regulated poultry-yard. If they roost on the top of a cart or waggon under an open shed, they are liable to harsh and summary eviction by a carter, who is justly annoyed by the accumulation of filth in their resting-places. The stable-boys chase them from the hayracks and rafters for the same reason, and hurry them out of the hayloft, which they defile if they retire there for warmth, repose, or the purpose of laying. In the latter case, indeed, their intrusion may be tolerated by the stable people for the sake of the eggs they may clandestinely obtain as the price of their connivance at the mischief which, without such fee from the intruders, they would peremptorily prevent. Nor can it be more agreeable to horses and cattle to have their straw fodder damaged by perhaps a very numerous lot of poultry pulling it to pieces in search of grains of corn at the barn-door. Therefore, even in farmyards, it is better to have poultry apart, except on those occasions of obvious convenience or economy, when they may be allowed to roam about without causing any degree of injury. Lock-up roosting-places or lodging-houses, with baths adjacent for the ducks, and with yards sufficiently large for the exercise and convenience of the tenants, without which their health will fail, should be provided.

The plan No. 1, admits of enlargement or diminution to any required size, and will suit the wants of fowls generally. It gives accommodation for keeping four varieties or classes of fowls, or of three sorts, and a few turkeys, if the dimensions (and the elevation more particularly) be somewhat increased, so as to afford the high roosts which, to turkeys (and pea-fowl), are almost indispensable. It will be seen that thorough ventilation is obtained by the arrangement; and to prevent any inconvenient intermixture of the inmates, either on the floor or the roost, netting may be interposed between the upper and open portions of the different depart-

ments. The openings with sliding doors, marked *d* in the surrounding fence, afford the necessary facilities for letting the different sorts of fowls in and out of the grass land, either together or separately, and in turns, according to seasons and circumstances, which will at times render promiscuous socialism objectionable.

In some situations a lean-to shed roof, instead of the span roof, would be an improvement on the plan here presented, to prevent injury to the thatch on the north side. With such alteration a door might be made to each compartment from the rear to at least the two middle ones.

But a still smaller scale of fowl-house may be preferable for those who have very little available space. The occupiers of small gardens in towns and villages cannot accommodate many fowls, nor more than one or two sorts, with due regard to the health and comforts of the birds. Where there is a narrow strip of garden, so common in town residences, we would suggest the sort of fowl-house described in the plan No. 2, which has been obligingly drawn for us by a friend from the model structure we have seen in the garden of Mr. F. Adnams, at Newbury. In many situations such neat and simple erections may be placed with convenience against the rear wall of the dwelling-house; and little gravelled yards, with a grassplot in front of them, can be taken without inconvenience from the length of the garden. In such confined space, it is plain, however, that the sorts of fowls kept so closely, should be those which bear confinement best, such as the domestic Shanghaes above all others.

The humblest cottager, also, may keep fowls and ducks too in a lean-to shed at a gable end of his cottage, and at the back of a fireplace. The fowls can have their roosts above, and nests for laying in; and ducks, or two or three geese, might rest on the floor. The ends and front walls, formed of rough slabs, or clay mortar with rude framework, a door at

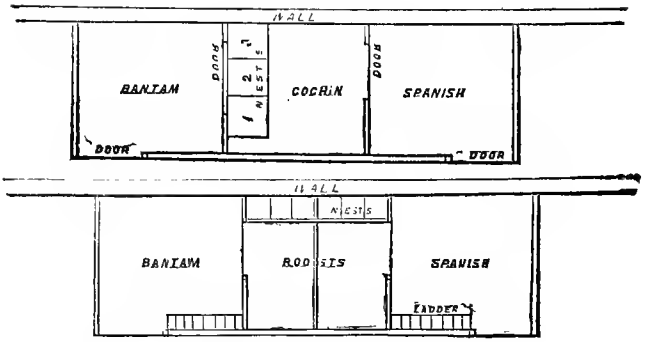
one end, and ventilators at both, and larch poles for roofing with thatch of straw or heath, will cost little; a small palisading may easily enclose a sufficient yard. "The enclosure does not require to be high; for if it is surmounted by thorn, or gooseberry, or bramble bushes, these the barn-door fowl never attempts to overpass. If this enclosure can be made to surround the ash-pit, so much the better; and in this way, even in unfavourable circumstances, a very perfect and profitable poultry establishment may on a small scale be formed.

"In this shed proper roosts should be fixed, and a space to be permanently open during the day, with a small door to be shut at night, and with an upper division on hinges for the purpose of cleaning and inspecting more easily. In the lower section and division there should always be kept a supply of soft short straw, as hens frequently give a preference to such a situation for laying; but the back part of the upper division should have laying accommodation for them also. The lower part, though always open, will, if well supplied with straw, form good lodgings for ducks. And if half of this lower division next the house and at the back of the fireplace, be boarded up, it will form a very snug berth in the coldest weather."*

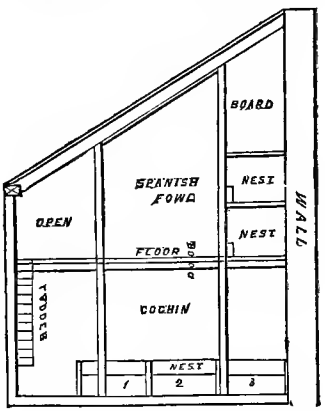
On reference to the scale and plan, No. 2, it may be observed that there is accommodation for three kinds of fowls, in three distinct compartments, each of which is six feet square. The centre one only is boarded in a permanent manner, while the others, viz., one on each side of it, with open wire-work, trellis-work, or net-work, as may be most convenient. In the front are two doors, near each end, by which entrance is obtained for cleaning out the compartments, removing the eggs, &c. The centre room has a floor about three feet high from the ground, where the

* "The Poultry Yard," by Peter Boswell.

No. 2.

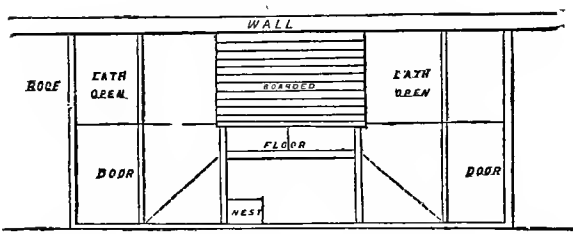


One eighth of an inch to a foot.



END SECTION.

One quarter of an inch to a foot.



ELEVATION.

The above design has been arranged for us by an obliging and intelligent friend, and is an improvement of his on the model of a fowl-house constructed by Mr. F. Adnams, of Newbury. His fowl-house has only two divisions. In some instances such limited accommodation is quite sufficient; but in others, the third apartment is desirable.

Cochin family may lay eggs, and rest at night, or roost if they wish to do so on low perches.

The space above the floor being divided by a partition, the fowls in the end compartments may severally occupy half the floor for laying or hatching, &c., and roost over it.

The open roof, in bad weather, may be protected with a thick mat, or a covering of sedge, straw, or heath, removeable at will; but in fine weather it would be better open.

If none of these plans satisfy, then try another:—"A great convenience, especially where a numerous and various head of poultry is kept, will be found in a range of small, separate fowl-houses, about a cubic yard, or a little more, in size, each with its own door fastened, and a latticed aperture, to admit air over the door; into these, each breeding fowl, with her young, can be separately driven from the coops at night, and remain there, without disturbance or quarrels, till the proper time to go abroad next day. Each of these private apartments can be gravelled or littered, according to the requirements of their occupants, and supplied with pans of water, green turfs, a cabbage, a handful of corn, or whatever else is wanted. If the floor of the fowl-house can be swept every day, and sprinkled with fresh sand, gravel, or ashes, so much the better. It is not good that turkeys should roost in the same house, as they are apt to be cross to sitting and laying hens."*

Lime rubbish should be always within reach of the hens, and a heap of dry, fine ashes for them to roll, or, as it is rather Hibernially said, to *bathe* in.

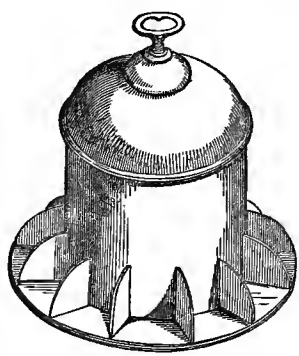
Fresh, pure water is one of the first wants; and if a stream of it can be conducted into the yard, and a pond formed for ducks, the establishment will be complete. Any one who has looked at ducks and geese in Mr. Baker's

* Dixon.

aviary, at Chelsea, and remarked the gambollings and delight of the aquatic poultry in basins of running water, will have also observed how much they enjoy splashing in the water where it comes on them through a large pipe, where it has the effect of a *douche* on those which rush towards it, this point being their favourite resort. This will afford a sufficient hint for the construction of a basin, with a tube supplying a stream, which has a discharging vent at the opposite end.

For holding water for the purpose of affording constant drink to the fowls, one of the simple fountains constructed by the Messrs. Baker is to be recommended. In flat, open vessels, chickens are apt to wet their half-fledged bodies, and sometimes to be drowned, from inability to get out. Such accidents cannot occur, if some contrivance, like this described in the plate, be used.

Mr. Baker's Fountain.



Mr. Bailey's Fountain.

"In extensive farms, there must always be a person that can be depended on, for the management of fowls, an office usually intrusted to an elderly woman or a girl. To acquit herself properly of this employ, she must be cleanly, careful, mild, patient, clever, attentive, and vigilant; when all these

qualities are combined in her, she is a perfect treasure, and ought not to be parted with, for slight cause.

"Her first duty in coming into office is, to try to render herself liked by the fowls the management of which is intrusted to her, to maintain peace amongst them, to settle their quarrels, to make herself acquainted with the peculiar disposition of each, to distinguish those that are not so shy, by speaking to them in a language which they understand, by feeding them by hand, and by evincing her affection for them by caressing gestures. How many peevish hens have been condemned to the spit before the proper time, which would have lost their cross disposition and have become sociable, had they in their first stage met with more goodwill on the part of their mistress, and a more caressing tone on the part of the keeper. No one, except the keeper, whom the fowls know, and the voice and sight of whom rejoices them, must go into the hen-house, for fear of scaring or disturbing the hens busied in laying. The inconvenience would be still greater, were a stranger to go and disturb them when they are sitting, or tending their chickens.

"After these first cares, daily attention must be paid to distribute food and drink at regular hours, to shut them up in the evening in the hen-house, to turn them out early in the morning, and to proportion their number to the means of subsistence which exist without much expense, means which are necessarily more easy and more abundant in corn countries than in others. It is, moreover, necessary to count them over frequently, to see whether the flock is complete; to attend at their meal-times, to judge of their appetite; to examine whether they are in good condition, whether they do not get too fat or too lean; to follow their steps, to watch their actions, and to use them accordingly, taking advantage of their disposition for laying or sitting."*

* Peter Boswell.

Let us lay before the reader the usual bill of fare for the whole company of feathered guests collected in a poultry-yard.

The food which poultry consume, has different properties. Barley tends to nourish generally, stimulate the system, and produce flesh and fatness. It is the favourite grain in England for poultry, which eat it with avidity. Wheat, except the tailings, is too valuable for human food, to be given to poultry, except for special or "fancy" purposes; nor does it contain more nutritious substances for them, than barley or oats. The small grains are excellent for chickens, when first beginning to pick up hard food, as they can swallow them easily. Oats, though much less relished by poultry, which will manifest indifference to it, from the great proportion of husk which envelops the grain, is, if plump and good, by no means inferior to barley; it should be converted, however, into grits or oatmeal, worked into paste, or mixed with potatoes, in which form it is highly palatable to all poultry. The fact is, that most of the Irish poultry is fed on oats, when any grain is given systematically, and fattened on oatmeal, with mashed potatoes and milk. Oatmeal is equally used in Scotland; "the halesome parritch, chief of Scotia's food," is nourishing to the body of man or fowl; and besides promoting the development of muscles, it produces flesh also. In oats there is as great an amount of starch, rather more of flesh-forming substance, and more of fat-producing matter, than in barley. Indian Meal is an economical and good food: its usual cheapness—compared with the price of the meal of our home-grown corn—gives it a preference in many localities. It possesses as much fattening substance as oatmeal, but more of starch. Rice is sometimes purchasable at a very low price, from damage received on shipboard, which does not deprive it of its essential qualities; it is not, however, very nutritious, and therefore inferior for

rearing or fattening poultry; but it is very useful as an alterative diet, when too much relaxing food has been used.

The proper manner of boiling rice for any purpose, is not understood by those of our housekeepers who have not had the advantage of learning it from persons who have lived in India, or some country where rice is in daily use. The grains should be separated completely in the boiling; not combined in clotty lumps as is often the case. Mr. Tegetmeir recommends the boiling of it for poultry, in a large quantity of water, with a piece of fat or dripping previously dissolved in it. On the advantage of cooking the food generally, he gives excellent advice.—"Experience is in favour of cooked food for live stock of all descriptions: from the changes effected, it is more nutritious, and is more rapidly digested; hence, there is less work for the stomach and digestive organs to perform, and therefore they are less liable to become diseased. From considerable experience in its employment, I can strongly recommend the following cooked food as being exceedingly well adapted to supply all the substances requisite to support a healthy and vigorous existence. One peck of fine middlings, and half a peck of barley-meal, placed in a coarse red earthenware pan, and baked for about an hour in a side-oven, or until the mixture is thoroughly heated throughout; boiling water is then poured in, and the whole stirred together until it becomes a crumbly mass: if too much water is added, the mixture becomes cloggy, a defect which is easily remedied by stirring in a little dry meal. Sometimes the barley-meal is omitted, and the baked middlings mixed with rice which had been previously boiled; this mixture forms the stock food of my old fowls, a liberal supply of grain being given during the day. I have found that since its adoption they cost less in food, and that they are in equally good, or even in better condition than when fed on an unlimited supply of grain

alone. Should there be no convenience for baking, it will be better to scald the middlings and meal with boiling water than to mix them with cold." Steamed or boiled white cattle-beet, reduced to pulp, will be found an excellent sort of food; also field carrots or parsnips, Swedish turnips, and Jerusalem artichokes; but above all, potatoes, especially for turkeys, geese, and ducks. Turkeys, though at first requiring grits, boiled egg, and all the good things prescribed for the dietary of young chickens, may, after they have grown up pretty much, have a more considerable portion of any vegetables. The havoc which they commit, if allowed to enter a cabbage-garden, on the tender leaves, shows that such food is natural to them; and if no other green diet be at hand, they may, at a very early age, have parsley or nettles made into balls, with grits or meal boiled to the consistence of thick porridge, which they soon learn to pick from the hand. But it is to be noted that high feeding, but not too stimulating, is the grand secret of bringing all animals to a full development of body, and filling up the framework suitably to its outlines. It is mistaken economy to stint any growing animals in their food, or to think that because a certain inferior diet will keep them alive and growing, that it is therefore *good* for them. In all the fine and magnificent animals—as to great size and high condition at a very early age—cattle, sheep, swine, and poultry, exhibited at a Smithfield Cattle Show,—it will be found that abundance of nutritious food, varied too in the qualities, has been given to them from the beginning.

During their early growth, there are periods with poultry when the best grain is indispensable to their support—grain with little husk—something that will not only fill the crop, but also give beneficial employment to the gizzard. For example: when the membranes of the head are beginning to *snoot the red* as it is termed, at this very critical period of

adolescence in turkey poults, a poor diet will not afford sufficient elements of nutrition to them. In harvest-time turkey poults and other poultry, if turned out in the morning on newly-cleared stubble field, will find, in the scattered grains and numerous insects, ample supplies of food; and for this reason, and the quantity of corn they may pick up in the farm-yard, no class of persons can so profitably rear poultry as farmers. To those who have no such auxiliary means of feeding poultry, their keep becomes a much more serious consideration; and to save the cost of purchasing corn for them, the vegetable produce of the garden is an important item in the dietary, and must be resorted to. Indeed if barley were at unlimited disposal for them, it would be dangerous to feed any poultry too exclusively with it; for it is apt to distend the crop and thereby cause disease and mortality. The practice of the Rev. W. Bond, who has a very large number of Shanghaes, is to give a feed of meal in the morning—three parts of fine pollard to one of barley-meal—and another of barley in the afternoon; and for variety, as also for experiment, he sometimes adds a peck of raw carrots, cut into small square pieces, to about one hundred Shanghaes; but he prefers beet to carrot. Though especial circumstances will call for a higher scale of nourishment for poultry, even when reared and running about, without any immediate view to fattening, a great proportion of their food may consist of such vegetable diet, with bran, middlings, &c., as has been described.

Poultry of every class should be allowed to enjoy the utmost freedom of range and exercise that circumstances will admit of, not as a holiday enjoyment, now and then to be indulged in, but as a constant daily practice.

It is a mistake to suppose that fowls do not require the same amount of food at all seasons. Hatching hens, if properly

treated, that is, if removed from the nest daily to feed, will consume a great deal of corn in a few minutes; during the two last days of incubation only do they abstain from it; anxiety and over-excitement at that critical and interesting time deprive them of all appetite. The hatching fever does not deprive the Shanghae hen, at least, of her appetite, though it is less voracious than at other times. And it is to be calculated too that a hen, even if she have, previously to the birth of her brood, fallen off in appetite, will amply make up for any previous abstinence, or indifference to food, by eating very heartily when she is surrounded by her young family, to whom, if they be rightly treated, food of the best sort too will be frequently given during each day, and in small quantities at a time, for in this way the appetite and digestion are duly promoted. So that on the average of a month, hens will consume the daily quantity which a dietary table will prescribe for any given period of the year.

Some over-economical, and certainly ungrateful poultry-keepers, would prevent a poor hen from partaking of the dainties provided for her chickens, by keeping her closely caged within a coop while these are feeding outside it, and giving her some inferior food, and, perhaps, very little of it. This is a cruelty, and the more so, as the hen will, at least until her brood has become strong and independent of her maternal care, take much more pleasure in seeing them pick up what is scattered before them, teaching them how to select the best bits, than in devouring them herself. After a few weeks, however, when the hen becomes selfish, and disposed to take more than her share, a separate table becomes necessary.

The use of a coop, such as is so common in England, but very little used or known in Ireland, to confine the nursing hen, lest she should lead her brood into dangerous or forbidden places, or stray with them too far from shelter in case

of sudden showers, or too much sunshine,—is quite necessary in every well-appointed poultry-yard. Where many hens and broods are existing at the same time, it would be very difficult to keep them separate, as their respective ages, kinds, or dispositions of the nurses may render necessary. The hen within the bars calls her brood to enter through them, with a tone which they instantly respect and understand, whenever she knows that they ought to be with her, though at other moments she will acquiesce in the expediency of leaving them to their pastime at a short distance from the house of refuge, and always within call.

The most suitable food for the two first days for the chicks of poultry generally, is crumbs of stale bread, soaked in sweet milk, or good beer; curd is good, and the yolk of an egg boiled hard, and mixed with the crumbs, is a frequent and excellent addition; and the hard white, or albumen of the egg, may after a very few days be also intermingled with the soft and digestible mess; groats will be an excellent variety; and potatoes with oatmeal made into a paste with milk or boiling water, and crumbed for the little creatures (which should be very frequently fed, in small quantities at a time), is also one of the early and approved regimens. After the first week or ten days, a small quantity of the small grains, or tailings of wheat, may be thrown to the chicks, which, with intuitive readiness, even if the mother's teaching were wanting, would pick them up as much for sport as to satisfy appetite. This is decidedly the best corn, during the first month, for the chicks of fowls* in particular, as the grains are easily swallowed, and the nutrition derived from them is then quite suitable. It is true economy, to feed

* By "fowls," we mean throughout, the cocks and hens of the *gallus* or cock genus, as by "cattle," are meant by agriculturists, in professional language, the ox genus only.

chickens in the best manner at the beginning; and the best grain of its kind will be found the most really economical for them until they are well grown, and independent of the tender management in chickenhood, by which their future health and growth will be so much affected. A little meat, chopped into small bits, is good for them now and then, especially if they are early hatched, when no insects are to be obtained in their exercise-ground.

The noisy delight with which fowls from a very early age will seize upon a bit of flesh, and try to devour it, without sharing a morsel with another, has often amused and surprised us. In trying to account for the instinct which leads the lucky discoverer of the choice morsel to proclaim to all her companions that she has it, while she runs apart from them into some secret place if she can reach it, to devour it like a glutton, we have been induced to think that such apparent folly and inconsistency on her part is occasioned by the wise necessity there may exist for restraining a fowl's indulgence in such case, within a due limit. If she took away a large bit of meat unperceived, she would eat it altogether, and perhaps to her own injury, but by being forced, through the notice she gives, to share it with many other individuals, she may be saved from the injurious effects of eating too much of a good thing, while the rest, by tearing it in pieces among each other, may obtain a fair and salutary share of it.

The early feeding of turkey chicks is the same as that recommended for young chickens. Cakes, and pellets of oatmeal and potatoes, agree well with them; and as they have a strong desire for green food, as they soon manifest by pecking at cabbage-leaves, food of this green vegetable nature may be beneficially chopped into their mess; nettles, or parsley worked into balls with grits or meal,

will not come amiss to them. As the turkey hen is too stupid to teach her chicks how to search for food, the hand of man or woman is necessary to give them their food: and they will also require human care to regulate their airings after the dew is off the ground, and drive them to shelter from too hot sun, or showers, during at least the first six weeks. The neck and head then shoot the red, and at this time they should be particularly well fed, as before noticed. They are turkey poults after this change of constitution occurs, and they then become sagacious enough to pick up grains of corn and insects in the stubble fields, and for some time they thus save cost to their owners. But there should be some keeper at hand when they are roaming over fields, to remove them to shade or shelter as the state of the weather may render expedient. Cooked Swedish turnips greatly assist in the support of a flock of turkeys, and the run about a farmer's yard, with the range of a pasture field, or plantations, will enable them at times to live well, and almost independently of the poultry-keeper's provision commissariat. Cooked potatoes, parsnips, or Swedish turnips may be mixed largely with meal, and even with bran, if of the best quality, for the young birds, after they are six weeks old,—a due change of dietary being always observed, and yet so that the food shall at all times contain the greatest available amount of nourishment.

Goslings may take a walk in the open air, in very fine weather, on the third day after their birth, for a short time, with the precaution of shading them from the hot sun. Their food at first should consist of barley or oatmeal, but afterwards grits may be given, of much coarser quality than that for chickens; a small portion of bran, after a little time, may be mixed with boiled potatoes; but like chickens, they must be fed frequently at first, as they are greedy. Green food from the garden is scarcely a necessary ingre-

dient in their mess, as they supply themselves liberally with grass when they become strong. If, however, they have no pasturage, they should be supplied with garden offal chopped up in their food.

The early feeding and general treatment of ducklings is the same as that prescribed for goslings, except that no green food is given to them, as this is not a natural aliment for them. There is to be the same precaution to keep them for a fortnight from the pond, though they may be allowed after four days to paddle in a flat dish; and for this object the mother should be cooped up with them for a few days, except for a short period each day, and under strict superintendence. They should, like goslings, have plenty of boiled potatoes mixed up with their meal, with a flat bowl of clean water for drink; and, after a month, they will eat raw corn if it comes in their way; but worms, which they pick up themselves, are their chief delicacy. As they are very voracious, they should have abundance; they will thrive, according to their feeding, with little trouble. Ducks are seldom or never crammed, as they fatten sufficiently while at large, nor need they be debarred of the pleasure of bathing in moderation; all they require to render them grossly fat is some corn once a day, besides a mess or two of potatoes mixed with middlings, should they not have an opportunity to pick up offal of all kinds.

All poultry like a change of food, and will often leave a profusion of corn for the grass and insects of the field.

Guinea-fowls have an especial desire for food of this sort of their own selection; yet they require the hand of their master to feed them with grain or whatever may be the "rations" for the morning and evening meals of the day. The same food which is fit for chickens generally is good for them. They are delicate birds at first, and should never be left long without some appropriate food, else they may take

it into their heads to faint and die altogether. We are assured that they should be fed much more frequently than other fowls—seven or eight, or more times, a day, as their powers of digesting food are surprisingly great. They grow very rapidly, and therefore require quickly-succeeding meals to supply the needful aliment. Mr. Dixon gives a very striking report of their requirements in this particular. "A check in their growth once received can never be recovered. In such cases they do not mope and pine for a day or two, like young turkeys, under similar circumstances, and then die; but in half an hour after being in apparent health, they fall on their backs, give a convulsive kick or two, and fall victims, in point of fact, to starvation. The demands of nature for the growth of bone, muscle, and particularly of feather, are so great, that no subsequent supply of food can make up for a fast of a couple of hours. The feathers still go on—grow, grow, grow, in geometrical proportion, and drain the sources of vitality even faster than they can be supplied, till the bird faints and expires from inanition. I have even fancied that I have seen a growth of quill and feather after death in young poultry which we have failed in rearing. The possibility of such a circumstance is supported by the well-known fact of the growth of hair and nails in many deceased persons."

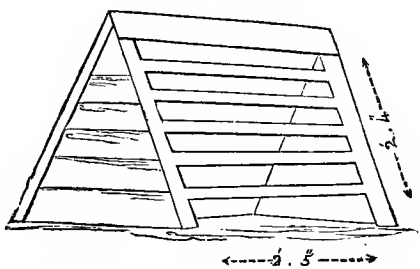
This may appear a little exaggerated, but it at least points out the necessity of feeding all young poultry, with more or less of frequency, however, according to their constitutional peculiarities, if it be expected that they shall become strong and well-conditioned.

Though it would be cruel, for some days after the birth of a brood, to exclude the hen, which has almost starved herself for three weeks at least, while performing her natural duty on the nest, from some share of the good food provided for the chickens, economy requires that comparatively delicate

and expensive food, such as boiled eggs and crumbs of bread, should be reserved for them, while she has an ample allowance of coarse grain, or whatever may be her ordinary diet.

It becomes expedient, therefore, to separate her, in some measure, from her brood, while they are consuming the handful of choice food designed for them. A light moveable frame coop, therefore, such as we have engraved, becomes necessary. It is so light that a girl can easily move it;

THE MOST COMMON SORT OF COOP FOR A HEN WITH HER BROOD.



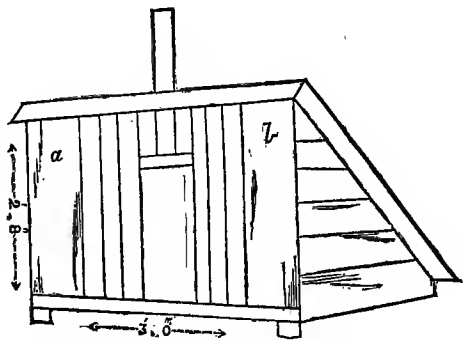
The ends and back part to be close boarded.

and by placing the chickens' food under it, they can enter it at will, and come out when they please; while the hen, satisfied in general by seeing them eat comfortably, feels no jealousy, nor craving for the forbidden luxury, but turns to her own barley or oats, which the little ones could neither swallow nor digest.

Where many fowls are kept together, and in different conditions, it may be, at the same time, some with broods, others ready to devour every grain in the poultry-yard, and some requiring separation, or protection from others, owing to many causes, it is necessary to put a hen in care of a brood in such security that she can neither be tormented by other fowls, nor allowed to wander from a limited space with her

young. To effect this, the sort of coop here figured is used. In this the hen is placed, with food and water sufficient for her own use, and the chicks are fed outside, either under the coop, or at large in the yard, if no other fowls interfere with them. The mother remains like a patient, watchful, sentry within, and her summons, at any moment, calls the youngsters around her, either to sleep under her wings or to avoid a passing shower.

ANOTHER SORT OF COOP FOR A HEN WITH HER BROOD.



The ends, back, and part of front marked *a* and *b*, to be close boarded.

It will be seen that this coop is partly boarded in front—towards the sides, in order to afford a secure corner at each front angle, in case of wind directly blowing on the bars. This is better than depending on the vigilance of any woman to shift the front, according to the direction of the wind. The coops should usually be put down (and changed too, for the same purpose, during the day), to face the sun, unless its rays be too ardent. And this sort of care is needful for the first month; afterwards the door may be left open, for the hen to walk in and out at discretion, as she and her chickens will, in some measure, begin to feed together; and even if not, they will require her attention with them in their pro-

menades about the garden or field, to teach them a great many things which they will require to learn from her.

We had intended, at first, to give a design of a turkey-coop; but as this would only be the hen-coop on a larger scale—let it be about four feet in length, thirty-two inches in height, and three feet four inches in depth—it would be a superfluous exhibition. It should, however, have a handle at each boarded side, for moving it from one place to another, and a moveable boarded door with a few holes in it to admit light, that can be fastened by a wooden button at each side. As the turkey poults might remain a considerable time under the protection of such coop, with liberty to pass through the bars at will, it would often be necessary to put up the shutter, either as protection from rain, wind, or sun. It should be their dwelling-house for some time.

We are led to introduce what may appear to be very commonplace and familiar matter, but we do it for the benefit of our readers in Ireland, where such coops are almost unknown, and where we desire to see them introduced.

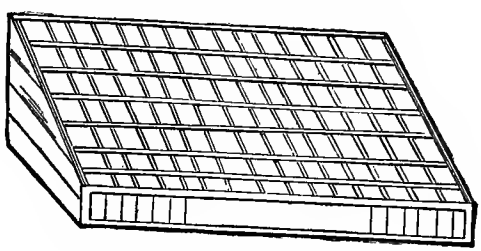
The number of casualties which occur to the Irish peasant breeders of poultry, more particularly from want of accommodation for their young fowls, and the means of protecting them—as so well understood in England—from innumerable dangers, is very great; and we are quite sure that these English coops would be serviceable to them. Even farmers in Ireland lose their poultry by wholesale very often, from accidental injuries and negligences in the farm-yards, which the English management would prevent.

But—on the reciprocity principle—we must, before the subject of fattening fowls shall be dismissed, present to the English reader the *fac-simile* of an Irish fattening-coop, which is as unknown on the English side of the Channel as

those we have described are on the other. Let us have even-handed justice at least in this matter.

The increase of poultry which may be effected in Ireland, where even under very adverse circumstances large supplies of them have been always reared, may be, and no doubt will be, vastly augmented, when the best methods of breeding, rearing, and fattening them shall be more generally understood. Yet for domestic consumption—well-flavoured flesh being a first consideration, we greatly prefer a state of comparative liberty, which is the general rule of English management—to the close confinement of a coop. Poultry, picking up their food with a little healthful exertion, and the pleasant sensations which accompany a state of freedom and of good living at the same time, are in a more healthy state of body than prisoners crammed for slaughter; but the higgler and poulterer find, notwithstanding, that it is their interest to have very fat and heavy fowl; weight is of course a great object in the market, and therefore the mode of fattening which produces the greatest weight in a short time, and is the most effective, if not the sweetest and most natural to the recipients, is that which they will promote, and for such purpose a fatting-coop is called for.

FEEDING-COOP FOR CHICKENS.



The top may be covered with laths or net.

To see poultry at liberty, and enjoying life according to

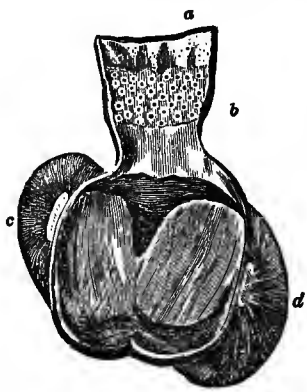
their respective habits, at large in the farm-yard, and with the privilege of rambling about adjacent meadows, or nestling under the shade or shelter of a hedge, is a pleasant sight; and the natural and pure food which they find there is more calculated to impart an agreeable flavour to their flesh than the rank and greasy substances which we know to be given to them when "put up" for the market-fattening course.

Clever as the English are in breeding poultry for sale, the ingenuity of the Chinese in bringing them to a heavy weight in a very short time is much more so, if they still practise in the way described in Anson's Voyages. A large number of fowls and ducks were bought as live store for the use of the Commodore's ship; many of them died in a very short time. The idea that they had been poisoned occurred to the ship's company, who were alarmed accordingly; but on making *post-mortem* examination of the birds, it was found that they had been crammed with gravel and pebbles to increase their weight; and to such an excess had this been done in the case of the ducks, that their weight was increased by ten ounces.

Yet gravel is one of the substantial things which fowls swallow of their own accord, and without which their digestion would often be deficient. Why is this? To promote digestion. This is such an interesting and important subject, that it shall be stated in the language of most able physiologists:—"The principal digestive organ of fowls is the gizzard, a peculiar and most powerful muscle, the inner coat of which is fitted up with rough plaits, which, by a strong friction against one another, break and grind the hard aliment as effectually, and by a similar kind of mechanical action to that of a coffee-mill. It has been proved by the most correct experiments, that the gastric juices of these birds will not operate upon the entire grain, not even when

softened by water, or macerated in the coop; therefore without a grinding-machine within its body—without the trituration of the gizzard,—a chicken would starve upon a heap of corn." *

The gizzard is the grinding machine, which reduces by trituration the corn that would not otherwise be digested, to such a pulpy state as to be converted into nourishment for the body; its four strong muscles are the grinders.



The engraving shows the gizzard of the turkey laid open; *a*, lower portion of the crop; *b*, ventriculus succenturiatus, with its zone of glands; *c*, muscle of the left side of the gizzard; *d*, muscle on the right side.

The largest and strongest birds have the most powerful gizzards. That of the goose can do its work in a very short time. The ostrich has been long famous for its powerful gizzard, which enables it marvellously to digest substances of great solidity.

Experiments to test the powers of the gizzard, and the precise modes of its action, have been made, of a cruel, but curious nature, and of practical usefulness.

* Paley's "Natural Theology," illustrated by Lord Brougham and Sir Charles Bell.

We give the substance of information chiefly collected from French writers. We shall state the facts in our own way, but in the consecutive order necessary to explain their bearings.

Signor Spallanzani, a distinguished Italian experimentalist, first desired to ascertain whether the fluid in the gizzard had, like the gastric juice in the human body, the power of dissolving food, if this were not subjected to the process of maceration.

He accordingly contrived that some birds should swallow entire grains of corn cased in small glass and metal balls, pierced with holes. After the lapse of a sufficient time for his purpose, the gizzard was examined, and the grains were found unaltered, though fully exposed to the action of the fluid entering the tubes through the holes.

He next put bruised corn into the balls, and this became dissolved, according to the time it remained in the gizzard.

Thus he discovered the necessity of bruising the grain to render it digestible.

He next found that tin tubes filled with grain were after a considerable time broken or distorted. Ducks, fowls, and pigeons reduced to powder hollow globules of glass in a short time, and solid ones in three weeks; and, what especially showed that the process of grinding them had proceeded, they were not broken into sharp angular bits, but into blunt ones—worn as it were by the millstones of the gizzard, which reduced them to powder, if they were left long enough in that machine.

Finding that smooth or blunt substances did not injure the texture of the stomach, he next tried what sharp-pointed ones, such as a large number of tin needles, would effect; these he put into a ball of lead, with the points sticking out from it about a quarter of an inch: enveloped in paper, it was crammed down the throat of a turkey, and the poor victim of science

and curiosity did not appear distressed by it during thirty-six hours. The stomach was then opened, and it was found that almost all the points of the needles had been entirely broken. This philosopher, so ingenious in the art of tormenting, next administered to a turkey-cock, a dose consisting of twelve small sharp lancets in a ball of lead as before. In eighteen hours the mill had broken the lancets to pieces; three were found in the large intestines with the points rubbed off; and the rest had been voided in the usual way. The stomach had sustained no damage.

Pursuing his chain of experiments on turkeys, he ascertained that in two hours the gizzard had begun to grind off the sharp points; and that in four hours, four of the lancets had lost their points.

By analogous experiments, the use of gravel and stones swallowed by fowls was discovered; not that the gravel or stones are necessary to the grinding of the food, as is generally believed, though they may produce some effect, and assist in grinding down the grain, and producing the due results. We shall quote the concluding paragraph entire:—"Fowls have some power of retaining the small stones taken into the gizzard, or evacuating them when they become polished and less useful, though they cannot, as is said in some books, disgorge them as birds of prey do the pellets of bones and feathers which they cannot digest. In a state of nature, birds swallow only a wholesome portion of these stones, whereas tame birds frequently devour too many. Instances have been known in which the whole cavity of the gizzard was filled with gravel; and in particular, Colonel Montagu mentions part of a brood of ducks, half-grown, which swallowed so great a quantity of gravel, as not only to fill the gizzard, but the crop and even the gullet: they soon died." *

* Dickson.

But the gizzard is only a part of the machinery for receiving and preparing the food for the nourishment of the body. The organization of the compound machine is as follows: first there is the crop, which, like the hopper, takes in the grain, and is analogous to the first stomach of the ox or the sheep. In the crop the food becomes partly dissolved by a liquor which is supplied by the glands that are distributed over its surface, and thence passes through the lower portion of the gullet into a small funnel-shaped stomach, in which a gastric fluid serves to soften and digest the food more than was effected in the crop. The gizzard, into which this food is next transferred, is the last of what may be considered a series of stomachs, and its functions have been sufficiently detailed. Without needless recapitulation of the *modus operandi* of this important organ, we shall only add that, from the coarseness of its texture, it possesses so little of the acute sensibilities of more delicately organized parts of the body, that it will go on with its work even when the bird in whose framework it is thus actively operating, is pining away, or at the point of death. Its last labour is to discharge the food which it has reduced to a fit state for the aliment of the bird into the receptacle for the chyle, where, by the agency of that other great organ, the liver, it becomes mingled with the bile, received from the blood through the medium of the gall-bladder. In the farther passage of the food thus completely prepared, through the smaller intestines, the elements of nutrition are absorbed into the body, by little vessels admirably adapted to this purpose, while the residuum is discharged. We shall not pursue the matter farther.

The kidneys promote the discharge of the superabundant fluid from the blood, which commingling with the solid refuse of the food, departs along with it by the same outer passage. Anatomists of poultry tell us that the intestinal canal of the

common cock is five times the length of its body; but that of the Guinea fowl is so remarkably short as to constitute a marked difference in their organizations.

Cocks and hens are not fastidious in their tastes for food, as nothing of green vegetable is distasteful to them; so do they also consume with avidity every nutritive substance thrown in their way; flesh in a state of putridity, or teeming with new animal life, is seized upon with eagerness, disinterred from the dunghill, and devoured as a *bon-bon;* and the more it teems with worms and maggots, or the larvæ of insects, the more exquisitely delicious is it to their tastes. Some breeders of fowls have taken the trouble of forming composts of blood or other animal substances, earth, and horse-dung, to generate supplies of worms, to be dealt out in the season when the earth is closed up by frost against the bills and claws of fowls. The directions for making one of these worm-heaps (*verminiers*) are given in full detail by the old French agriculturist Olivier de Serres. The taste for worms of a full-grown size we can vouch is not possessed by all hens; many of them turn from them with loathing, and allow a duck to rush in and gobble up what they will not touch; yet they acquire the taste very soon for them. M. Réaumur, the indefatigable French experimentalist, fattened a hen thoroughly in a fortnight on worms exclusively; he began by giving her a pint daily, and increased the allowance until she could eat three pints in the day without disgust. A few very small worms will seldom be distasteful; but the larger ones should fall to the share of the all-devouring duck, with the snails and slugs, which are as delicious to it as German sausages to a hungry mechanic. Butcher's meat, or fish that may have become too *high* for human food, and is not wanted for a dog or cat, is economical and excellent for fowls, if supplied in very limited quantities.

We have had occasion to express an opinion that feeding

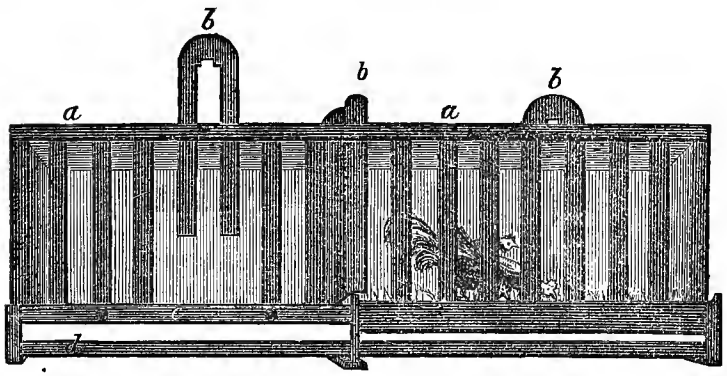
poultry is not *profitable* in any measure, however pleasurable and innocent as a recreation, if the food be purchased altogether; and more especially if the birds be fed on grain in the fullest manner. It may be useful to show how the cost of keeping any class of poultry may be critically ascertained. We shall suppose, for illustration, that the calculation is for a cock and four hens, during any definite period—suppose for three hundred and sixty-five days, and that barley is the sole food (though in practical management an alterative dietary must sometimes be substituted, but which can be estimated also); and let it be assumed that each large adult fowl consumes half a pint daily:—365 half-pints per annum, or 2 barrels, 3 bushels, 3 quarts, and 1 half-pint; five will therefore consume 14 barrels, 1 bushel, 1 quart, and 1 pint of barley, at—

Per Quarter.			*Per Bushel.*			*Cost per Annum.*		
£.	s.	d.	£.	s.	d.	£.	s.	d.
1	0	0	0	2	6	1	15	8¾
1	5	0	0	3	1½	2	4	8
1	10	0	0	3	9	2	13	7
1	15	0	0	4	4¼	3	17	1

By this mode the cost of food can be ascertained for any portion of the year.

The demands of the market, if not of the domestic table, require in strict economy that some poultry should be confined for full fattening; but the duration of their captivity should not exceed two, or at the most, three weeks. Yet it is bad and wasteful management to kill poultry that are undergoing the fattening process, before they have attained their full weight, or nearly so; because having passed the time when the appetite is keenest, and the consumption of food of course greatest (that is, during a state of leanness), and arriving at a condition when, with a continually increasing amount of flesh, and decrease of food, they are most profitably maintained, it is an obvious loss of advantage, to bring

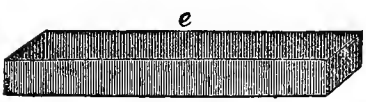
them to the table prematurely. A week more of moderate feeding would, at the conclusion of the fattening process, put up more flesh than ten or twelve days at the commencement, with a larger proportion of food then.

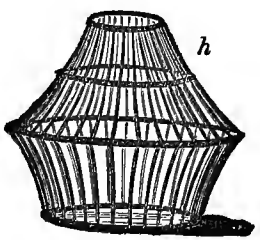


Length, 4 feet 9 inches. Height, 21 inches.

a, a, Compartments, each to contain eight chickens.

b, b, b, Bars that lift up, the central one being for the purpose of allowing the chickens to pass from one room to the other, when it may be necessary to clean either.





The Irish Chicken Coop (it nearly represents the Norman also), to which we have made reference in the preceding page, is of the shape and dimensions shown :—it may be either placed on a frame made purposely for it, or made fast to the wall in a back kitchen or outhouse, but raised sufficiently to have the feeding-trough out of the reach of dogs and cats.

The coop is divided into two wards, each capable of accommodating chickens or fowls, which, if they had previously been associated together, will agree well in captivity. Otherwise they may quarrel at first, but by good discipline and management they may be managed. With unruly or bullying prisoners, solitary confinement in single cells (and divisions may be framed easily) will be necessary.

If practicable, fowls of the same broods should be put together, else the weaker will have to remain in the rear until the stronger shall have first filled their crops to repletion. The trough, *e*, in which their food is put, should be kept sweet and clean ; and the milk or water in the compartments *a*, *b*, should be re-supplied every day ; the floor of each prison-room is a sliding board, under which are open bars, *f*, on which the chickens stand when the boarded floor is withdrawn for the purpose of cleanliness, and through which the excrement falls to the ground. A coop for confining full-grown fowls or turkeys should have only the barred bottom, for their claws to grasp, as in their natural manner when roosting ; but for birds that have been accustomed, like the Cochin Chinas, to lie on the ground and in warm beds, hay or straw can be laid on the bottom, and renewed repeatedly.

We have also introduced for the Irish reader, the English *basket* coop, *g*, for confining a hen whom it may be desirable to prevent from brooding ; or to separate a fowl from the others, for any purpose during a short imprisonment.

The other basket, *h*, is used for transferring chickens or

fowls from one place to another, without the necessity of tying their legs together, as is done when the common hand-basket is used for carrying them about.

Pure and natural food is to be recommended. Meal of barley, or oats, and the boiled and warm potato mashed with milk, is best. Suet, molasses, and all greasy substances are an abomination; but still they produce the fat which some people love to see oozing through the reeking flesh when placed upon the table, corresponding in lusciousness with the rank oil-fed beef and mutton, which we loathe.

Rice, we have stated, is not a very fattening food in our climate, but in India it is the usual food of fowls—as in the north of France buckwheat, and this alone in general is the food of the cooped fowl; but it does not fatten them, however good the flavour of the half-fattened captive may be. The Indian practice—which (multiplying however the one meal a day by four, and giving oatmeal or barleymeal frequently) would, we have no doubt, answer very well in our climate, is as follows,—according to the report of a correspondent of the *Agricultural Gazette*:—

"The feeding-house was kept as cool as possible, and almost dark. Each fowl had a separate pen; they were fed once, and only once, a day with rice boiled, as rice ought to be for Christians (human creatures?)—not to a mash, but so that grain for grain should separate. The quantity for each fowl was about two ounces (before boiling). For the first three days, to each was given about a teaspoonful of 'ghoor,' or coarse sugar—about half as much again of treacle would have been an equivalent. This commencing with sugar was held to be very important; it cleansed the birds and disposed them to fatten; no water was given; neither was there any chalk or gravel, both being unknown in the country. To boil the rice in buttermilk is far preferable to boiling it in water. Many people run away with an impression that

fowls fed on rice will go blind; it is dirt and sourness that cause it. How often do we see a trough loaded with meal, food sufficient for two or three days, placed before the unhappy prisoner in the pen, who cannot escape from it or seek other and sweeter food! When the fowls have done feeding, the trough should be removed, cleaned, and exposed to the air until the next day's feeding-time."

We must revert to the early feeding of geese and goslings in connection with the Lincolnshire mode of breeding geese, as previously mentioned. The geese are well fed with barley from the 1st of January, to prepare them for a course of laying. The quantity estimated for each individual until the hatching commences, is about a bushel.

Old tea-chests are frequently used as the hatching chambers, placed above each other.

When sitting, the geese get oats, which is always in a trough or cup within reach of each bird, and they are taken up morning and evening to drink. When all the eggs of any clutch are hatched, the goose is put under a coop, and the goslings are fed with tailings of wheat and turnip-tops. At the end of a week the mother and her brood are set at liberty, and they take their chance in the lanes and green fields, but get some corn daily for about a month; afterwards, they have nothing more given to them; they must forage for themselves (unless put up for fattening while green geese, in which case they are fed with barley-meal).

Goslings, generally, are easily reared: they require only to be guarded from rain and cold at first; the greatest mortality affects them from the third to the fifth week, when the quill-feathers are growing. Once reared, they are very hardy, and amongst the earliest poultry for the table, being presentable at it, if well fed from their birth, at thirteen or fourteen weeks old. Their down, quills, and feathers render them the most beneficial stock to keep in suitable places,

such as the heaths and commons in Surrey and Berks. The best are found on the borders of Suffolk and Norfolk, and in Berks. Somerset furnishes the best goose feathers for beds. They must have a green field or common, and a pond, or stream of water, but should not be left dependent on their own foraging, for grass alone will not support them properly, as some of the Lincolnshire people, and peasantry everywhere imagine, though they might see the unreasonableness of this in the cramp and pining by which the birds are carried off in consequence of such a regimen. We must, however, admit that our Lincolnshire friend (whose geese appear to us to be on the half-starvation system generally) complains of losing many by the *gout*, which, at least, with human bipeds, does not usually proceed from bad living.

Cleanliness is a very important part of the matter, and it cannot be too strongly insisted upon. What are we to think of cramming poultry? Turkeys, geese, and fowls undergo this unnatural course of feeding; but we hope less frequently than in past days.

A French queen immortalized herself in the annals of luxury by paying 1,500 livres for fattening three geese (it was done, we believe, partly by the cramming process), with aromatic food, so as to give an extraordinarily delicious flavour to their livers. To this day, goose-livers, under the name of *foie gras*, are forwarded from Strasburg, particularly to all parts of France, for the feasts of the luxurious. In Paris, however, the art is also understood. The liver is unnaturally enlarged, by cramming the poor victim of the most detestable epicurism, with balls of paste highly-seasoned with cayenne pepper and various spices; meanwhile the goose is kept near a fire so as to render it feverish—by this treatment its liver soon becomes diseased—and as a consequence, sufficiently enlarged for the *patissier's* purpose.

We shudder at the recollection of the statement made to

us by a lady who witnessed the barbarity she related, that these victims of human gluttony are sometimes nailed through the webs of their feet to a board to *keep them quiet*, and in the vicinity of a heated stove, in order to maintain the febrile temperament.

The common French mode used to be—if it does not still prevail—to put geese by thirties in the same house, but divided into sections of eight, separated from each other by partitions, and so closely wedged that they could not turn, thus exciting feverishness and enlarged livers by keeping them in a state of high temperature from close contact. Geese are crammed, after our much less barbarous fashion, with meal worked into paste, and administered in oval pellets or boluses, with milk; and professed crammers usually put it into the gullet with the aid of a curved pipe, five inches and a half long, and somewhat less than an inch in diameter, and rounded to prevent injury to the gullet. Corn is passed into the crop, through the pipe, from a little bag fastened to the upper end of it; and any sort of food can be introduced through the same tube. With this mechanical contrivance a smart operator can cram ten or a dozen geese in an hour: yet expert women can also do it well with the fingers, though not so expeditiously and surely. But greasy paste, which is so commonly used for market geese, imparts a flavour very inferior to that which a Michaelmas goose acquires from feeding in freedom, on stubble corn, and more particularly on oats, which gives the true flavour to the flesh. However fattened or crammed a goose may be for some weeks, it should get oats principally for the last ten or twelve days of its life, with milk, or pure water.

Among other barbarities, fowls have been blinded, with the notion of thereby accelerating their period of fatness, and it has been common to keep them in total darkness. Compared with this, confining them in single cages or boxes,

so formed that the head and tail can project at either end, while the body remains fixed, is quite humane. To fatten chickens nothing is so good, we repeat, as oatmeal, potatoes, and sweet milk; or the meal without the potatoes; and for grown fowls, cooped, nothing better can be substituted; though a dietary of very rank and unctuous ingredients will put up more flesh and fat in a short time; for instance, such as that which an old Sussex Agricultural Report describes: hog's grease, pot-liquor, treacle, suet, also sheep's pluck, mixed with meal and formed into paste for cramming down the throats of the Sussex fowls, which were thereby fattened to six and seven pounds' weight (and some double this), in little more than a fortnight. If kept longer, birds thus rapidly ripened would be seized with fever, which would spoil the flesh, and assuredly render it unwholesome.

Old Willughby has bequeathed to us one of those shrewd and rational observations which gain force from time and experience. "No better flesh in the world than that of a year-old pullet or a fat capon; nothing inferior to, not to say better than, that of a pheasant or partridge. Some there are that think, and we also incline to their opinion, that the flesh of those hens is most sweet and delicate which are fed at the barn door, running about and exercising themselves in getting their food, by scraping with their feet. And that the flesh of those is less pleasant and wholesome that are shut up in coops and crammed."

We have seen turkeys moderately crammed with oatmeal in paste (slipped into the crop by the finger three times a day), which became sufficiently fat in a fortnight.

Ducks are gifted with such appetites and powers of digestion that they are always disposed to feed heartily; in fact, they are of gluttonous propensities, and omnivorous. Nothing comes amiss to them. Yet, some weeks before they are wanted by the cook, they ought to be restrained from feeding on ill-flavoured garbage, whether animal or vegetable.

Oats, or oatmeal, with potatoes, we prefer for them; barley-meal, or rice, next; but any kind of grain or meal will impart to them a good flavour, nor need they be penned up, if kept in a clean yard, and out of reach of offensive offal; nothing more is necessary to render them presentable at table.

The following remarks, we think, are much to the purpose:—"If thrushes are excellent when they feed on grapes; if their flesh is bitter when they find nothing but juniper berries; if there is such a wide difference between the rabbit that lives on cabbage leaves, and that which crops thyme, what might not be expected by adding to the diet of fowls such substances as are capable of modifying the flavour of their flesh to advantage? It is well known that some turkeys that had eaten a great many onion leaves, had flesh of an exquisite taste, that nettle, parsley, fennel, wild succory, millefoil, or garlic, introduced into the paste for young turkeys, alters the flavour of their flesh for the better. Heath-seeds, or the tops of heath, are also said to improve the flavour both of fowls and of eggs, as they certainly do that of mutton. The inference accordingly is fair, that if more careful experiments were made than has hitherto been done to ascertain the effects of different sorts of aliment on flavour, discoveries might be made of importance to poulterers and higglers, and all those who keep poultry."

Capons.—We do not by any means admit that "capons are getting out of date," or that "two or three chickens may be sacrificed before one capon has been nursed into convalescence;" or that "the *south* of France is a better climate than that of England for them." For we happen to know from pretty long experience, that they are very commonly prepared in the *north* of France, without any difficulty or loss whatever, or a per centage of mortality so trifling as to be hardly estimated by the peasantry who breed poultry; and we are quite certain that the English climate would not

be generally more unfavourable to the health of the capon than the north of France.

In England, from whatever cause, capons are undoubtedly rare, though formerly they appeared here in every great bill of fare as a standing dish, and were as common as oxen among cattle. It is quite a mistaken notion that much art and attention are required to make capons: it is in consequence of this erroneous impression that they are not seen on our tables. But the surprising increase of weight attained by male fowls which have undergone what is really a very simple preparation, is such that we cannot hesitate to recommend the practice, on principles of economy, though in the cold damp parts of this variable climate it might not be found very successful. We have, indeed, some breeds of fowls with such natural aptitude for fattening, that they do not necessarily require this artificial mode of rendering them fat; which the French poultry, from general deficiency in this quality, decidedly need; yet the male birds of some of our kinds, the Spanish, for example, would acquire considerably more flesh, and a very fine flavour, too, by being treated in the capon fashion. We have frequently seen capons in size and appearance at table like well-grown turkey poults; though in the natural course they would have been ordinary-looking birds at table, narrow and sharp-breasted, and altogether very indifferent.

The number of capons fattened in France every year is considerable. The season for depriving the cock birds of the power of reproducing their kind is in the autumn (generally of the same season in which they have been hatched), and the operation is usually performed by the farmer's wife, or some other female inmate of his family. A transverse incision, about an inch and a quarter long, being made in the lower part of the belly, the forefingers are introduced to take out the parts which are to be removed, with the aid

of a pair of scissors to cut the cord without injuring the intestines. The orifice is then rubbed with oil or butter, and stitched up, and in three or four days the patient is quite well. He must, however, be cooped during this convalescence, in a cool place, lest inflammation should arise. The capons are put up for feeding in small numbers as winter approaches, and are fattened in a month or six weeks, the season being over at the commencement of Lent.

After this simple statement it may appear unaccountable that the method of caponising should in England have been long confined to two or three counties, where alone it was supposed to be understood, and where practitioners made some mystery of their art. Books with diagrams of machinery and instruments for the purpose have been published, and much unnecessary trouble has been taken to teach what thousands of old women in France perfectly understand, and can perform after a few opportunities of seeing how easily it is done. The Chinese have long practised this easy and economical method of adding to the size and weight of fowls, but after a fashion of their own, the details of which may be dispensed with.

Columella's process cannot be pronounced effective; it consisted merely in cutting off the spurs and comb, which he thought sufficient to unsex the bird.

Capons have been made use of for hatching and nursing chickens, by barbarous training, such as making them stupidly tipsy,* pulling off the feathers from the breast, irritating that tender part with nettles, and then putting the chicks under the poor nurse, who feels relief from their nestling against the itching or irritated part; and thus by repeated discipline of this sort, the quiet moping bird has been induced to sit on eggs, or contract a mother's affection for chickens. And

* As a natural consequence, as M. Réaumur relates, the half-drunken nurse would sometimes crush the chickens to death, or beat them with his bill.

the effect upon the capon's temperament by making him a nurse, and thus giving him importance in the poultry-yard, has been marked by an air of satisfied and triumphant pride, instead of the humbled, dull, and melancholy deportment which had previously marked him as—

> ——— "Sensibility's child,
> Who knew what it was to despair."

A lady informed M. Réaumur, that she had a vast number of chickens annually brought up by capons; and she frequently had more than two hundred chickens under the care of three or four capons,—which may be trusted with two or three times as many chickens as a hen can manage. Another advantage, besides, adds M. Réaumur is, that a trained capon is always ready for his work, and seems proud of his family in proportion as their number increases; whereas, hens will generally drive away chickens that they have not hatched, if they are not exactly of the age and size of their own.

But instead of forcibly training capons to sit on eggs, and by stinging applications, or by making them drunk, the poultry-maid of the French lady, who reared so many chickens with their nursing, pursued a different system of instruction: she kept the capons in narrow deep buckets, from which light was kept out by a covering; and took the prisoners up but twice a day, to feed. When they were weary of solitude, two or three chickens were allowed to feed with them, and these became objects of endearment to the poor solitary birds, who eagerly admitted them to the shelter and warmth of their portly bodies: their great size renders capons pre-eminently suitable nurses and incubators, as they can cover by their expansiveness so many eggs and chicks. After all, however, this solitary confinement for perhaps some weeks, is hardly more humane than the other mode. A schoolboy, we think, if he had his choice, would prefer

the birch-rod, in moderation and seldom, to lonely and long-continued imprisonment. Pullets are often deprived of the egg organ (by a similar incision into the body), in the southern parts of France, but we have not heard of any such practice in the northern portion,* most familiar to us. They are termed *poulardes* in this condition, and they increase and fatten like capons. Dividing the egg-tube across, will equally incapacitate them from producing eggs, and deprive them of the desire for brooding.

As we should endeavour to cause but the least possible suffering to the creatures we are permitted to kill for our food, it is satisfactory to know that poulterers and higglers, who kill the largest numbers of poultry, put the fowls to death as expeditiously as possible. Instead of cutting their throats in a clumsy manner, and letting them bleed slowly to death, they kill them quickly, and then pick and truss them in the following manner:—"A number of fowls are placed together indiscriminately, into a large hamper provided for the purpose, with a hole in the top; from their numbers and confined situation they soon become highly heated, when the higgler carefully takes one of the fowls by its legs and wings, holding them firmly together with the left hand, whilst with his right hand he breaks its neck, and immediately commences stripping the body of its feathers, the left hand being still employed in retaining it firmly in its proper situation. Such is the facility with which this operation can be performed, that a dexterous higgler will kill and pick fifteen fowls in an hour without difficulty. After the feathers are off, the fowls, while yet warm, should be singed, floured, and trussed, and by being placed between two boards, with the addition of a weight, the breast will be kept down, and they will soon appear nice and plump.†

* Normandy.

† Baxter's "Library of Agricultural and Horticultural Knowledge."

The favourite mode with cooks of putting ducks to death in France is horrible. They stick a pin into the brain, and leave the creature in a state of convulsion, as long as they can, fancying that the long protracted death-throes render the flesh tender. We have had great difficulty in persuading a French female servant—a kind-hearted woman, too, though insensible to such brute suffering—to adopt the more usual and speedier mode of breaking the neck, or bleeding it.

DISEASES OF POULTRY.

We adopt for simplicity and distinctness of arrangement, the classification of diseases suggested by a correspondent of the *Agricultural Gazette.**

First Division.
Febrile and Inflammatory.
Moulting fever.
Loss of feathers; Mange.
Hatching-fever.

Second Division.
Digestive.
Sick or full crop.
Oon, lush or soft eggs.
Egg-bound.
Torpid gizzard.
Diarrhœa.
Fluxes.
Constipation.
Gapes.
Worms.
Canker.
Gout.
Dropsy.

Third Division.
Catarrhal, Respiratory, and Pulmonary.
Chip.
Pip.
Influenza; inflamed eyes and nostrils.
Roup or Glanders.
Asthma.
Phthisis.

Fourth Division.
Nervous.
Megrims.
Apoplexy.
Paralysis.

Fifth Division.
External and Accidental.
Obstruction of rump gland.
Fractures.
Bruises.
Tumours.
Ulcers.
Vermin.
Corns.

Of the thirty-one diseases in the foregoing catalogue, a few may be considered as one ailment; two or three are

* *Agricultural Gazette*, Nov. 7th, 1846.

hardly worth grave attention (hatching-fever, soft eggs for instance), and some others have been incidentally noticed in preceding portions of this book. As far as our remaining space will permit, we shall offer remarks on the above maladies (with the exceptions adverted to), in the consecutive order in which they are enumerated.

Moulting and Hatching-fevers are hardly correct denominations of disease, if John Hunter's authority be respected. He found that the temperature of a hen's body did not rise during her hatching period. A medical gentleman (writing under the signature of D. I.) found by the test of the thermometer, that the heat of the body never varied in hatching, during winter and summer. Moulting birds will look sickly, and be seriously out of order, unless animal and other nourishing food generates heat to supply the waste from their denuded bodies; but as they have good appetites during this period, and also during that of incubation, he infers that they do not labour under any sort of fever, for in this case they would not eat. He concludes his interesting remarks thus:—Fever, I apprehend, consists in derangement of all the functions of the body. Does this state always exist in hatching? I apprehend not, but my own experience does not warrant me to speak positively.

Loss of feathers and Mange.—The natural process of moulting, although often accompanied by ailments, for which generous diet, warmth, and cleanliness, and good air are the best remedies, is not to be included under this head. This malady is analagous to the mange in cattle, proceeds from similar causes (half starvation and uncleanliness), inducing debility. A firm smooth plumage always indicates health in poultry, and when the feathers are ruffled and staring (unless in moulting), the presence of some disease may be inferred. The feathers will drop off unless the debilitating

causes be removed by proper regimen. Mr. Tegetmeier, after observing that this complaint may often be seen in the fowls of stable-yards in London, where they are confined to dark, dirty roosting-places (may we not add, and obliged to drink the foul water which flows from the stables and dunghills), without fresh vegetable food and insects, recommends a five grain Plummer's pill given two or three times, at intervals of three days. The feathers, however, will not be renewed until the next moulting. The "white comb" of similar character, which affects Shanghaes, has been noticed in the account of that family of fowls. Young turkeys suffer sometimes from debility, which manifests itself by the staring of the whole plumage: they have a pining and languishing appearance, and unless restored to health by care and good feeding, with free air and liberty, they die. A few of the rump feathers, if plucked, will be found to have their tubes full of blood; on the removal of these it has been found that the patient has recovered.

Diarrhœa.—Dry barley, rice (boiled), lime in the water, and the disuse of any relaxing food, will generally arrest the ailment. But the most speedy remedy is the best. Take then Mr. Tegetmeier's again, viz., five grains of chalk, two grains of Cayenne pepper, and five grains of powdered rhubarb; if this do not soon check the disease, half a grain of opium, and the same of ipecacuanha, taken every six hours, is recommended by him.

Constipation.—If relaxing food, such as bran or pollard in a sloppy state, green vegetables, and abstinence from the usual corn dietary (and avoidance of chalybeate water, if it be the natural drink in the locality), will not produce the desired effect, a table spoonful of castor oil, or twelve grains of jalap administered in a bolus, or pellet of meal, will be serviceable.

Gapes.—This may be termed bronchitis; it proceeds from

inflammation of the trachea or windpipe, arising from derangement of the digestive organs, and is quite distinct from the pip or thrush, which is a catarrhal affection. None of our poultry are exempt from this unpleasant affection On examining the windpipe, the immediate occasion of the suffocation under which the bird suffers, and will die unless immediately relieved, may be perceived; small worms called fasciolæ, are imbedded in slimy mucus in the throat. Mr. Bailey knows no better mode of curing the malady than that which has been so generally recommended,—introducing a tail feather (stripped within an inch of the end), down the sufferer's throat; by turning it round quickly, the worms entangled in the feathery end will be caught and drawn up. Turpentine rubbed on the feather has been suggested by others, but though it will destroy the parasites, it may cause increased inflammation. Dipping the end of the feather in a strong solution of salt would be likely to kill the worms as effectually, without producing mischief. The operation of fishing for the worms, by unskilful hands, may do more harm than good. We cannot tell from what source the following details of the operation are so clearly given; we found it in the *Agricultural Gazette*, 1846. "Let some one take the chicken, holding it in one hand, and placing the other over its back, so as to hold it firm, and then let the operator take a small but firm feather, and strip it from the stem, excepting about an inch and a half from the tip-end, according to the size of the chicken, wetting it a little except at the extreme point. The operator should then take the head of the chicken, placing his thumb and fore-finger on each side of the bill, in such a manner as to hold the mouth open, the neck being gently but firmly drawn out in a straight line. Then observe the opening back in the tongue, place the feather as near to it as possible, and when the chicken breathes the windpipe will be open, at which moment introduce the feather

quickly and push it down gently, but not in a hurry, from two to three inches; then draw it out, and in doing so turn the feather round, by which means some of the worms will adhere to the feather, others will be so loosened, that the chicken will sneeze them up and throw them from its mouth. It is not advisable to do it more than twice at the same time; but if the patient gapes the day after, you may be sure there are some still remaining, and the operation must be repeated. When such operation is not required, spirits of turpentine, mixed with their grain, has been given with good effect to chickens suffering from gapes: when hungry in the morning, they will not refuse it. This remedy was used by a correspondent of the *Agricultural Gazette*, (June 17, 1847), who administered half a teaspoonful of the turpentine in as much corn as fed twenty chickens in the morning. It put an end to the mortality. The philosophy of the cure is this:—The insect gets from the stomach into the windpipe, and the object is to kill it there. The spirits of turpentine (a great vermifuge) are to some extent absorbed into the lungs, and blown through the windpipe." The succeeding ailment will be removed by similar means.

Gout.—It is melancholy to see a respectable old cock, hobbling along with gouty feet. Mr. Nolan recommends sulphur in pellets of bread, as a possible remedy. It is more advisable to boil him into soup, or serve him up, after severe stewing, with curry powder.

Rheumatism and rheumatic gout are only to be relieved, if at all, by warmth.

The *Pip*, originating in fever, is a very fatal malady to fowls and young turkeys, and shows itself by inflammation in the tongue or throat. If the tongue be examined, a thick and adhesive scale will be found on the under part of the tip: this may be pared off with the nail, or with the assistance of a needle. Skill, gentleness, and patience, with

some experience, are necessary to the performance of this apparently easy operation, without injuring the bird, whose tongue will swell for a short time afterwards, and will require to be washed with borax, or fresh butter, applied with a feather. The thickness of the membrane which covers the tongue, and assumes at its termination the horny appearance, may give way, by early treatment, to castor oil, or jalap, with soft food, and allow the free respiration of the bird, without taking off the indurated portion of the membrane.

The Roup is a terrible disease, and like the glanders, contagious. Fowls from their natural congenialities with dry and warm climates, and their remarkable susceptibilities, suffer more than other poultry from inflammatory diseases. The roup is distinguished in its early stage by these symptoms :—The eyes become swollen, and a discharge issues from the nostrils, first clear, but afterwards thick, and offensive in smell. The mouth also waters. Of the cure we cannot speak with confidence; the eyes and head should be frequently bathed with warm water. Warmth is indispensably necessary—it is the secret of treating almost every morbid affection of the respiratory passages of our domestic animals,—but not warmth in a close or ill-ventilated place. Occasional benefit has been found from the antimonial powder, in doses of a grain, made into a pill, with bread. The country people have a great many nostrums: at the head of them stand garlic and rue, beaten into a mass, with butter; others give an apparently strange compound, rue and brick-dust; but not so absurd, on second consideration, as it would appear at first to be: there is the mildly stimulant effect of the rue, and the mechanical efficiency of the brick-dust, either in assisting the languid trituration of the food, or expelling the worms with which the intestines of these birds are often clogged. Ducks are very subject to

nasal catarrh, and frequently die almost suddenly. In geese it is recognized under the name of *gargle*, and is often successfully treated with garlic, beaten into a mess with butter.*

Common cold or catarrh, from dampness and cold, though accompanied with watery and swollen eyes, and discharge from the nostrils, is easily remediable by warmth, good feeding, and washing of the affected parts, as in the preceding case, which is, in fact, catarrh in its most aggravated form.

Phthisis, or consumption, is the effect of dampness; change of air and climate, if practicable, would be the surest means of cure. But as a voyage to the native land of fowls may not be convenient, even in the case of the most prized Cochin China patients, we cannot suggest any certain home remedy. If genial weather should uninterruptedly continue, this would be better than even cod-liver oil, which, if there is only tendency to it, may avert the disease, according to Mr. Tegetmeier. The oil may be administered with meal. We should prefer saving both the oil and the trouble, by turning the patient, on the first symptoms of decay, into a savoury dish, for a *friend*, hospitably allowing him to partake of the whole or greater part of it.

Megrims,—or giddiness, which causes the sufferer to look stupid and glaring, as if tipsy—to pant, breathe heavily, and walk in so constrained and unsteady a manner, and with such contraction of the legs, as to give the erroneous notion that the ailment is simply cramp. Too full feeding and want of air and exercise will sometimes occasion this distressing malady. A large spoonful of castor oil is a good remedy, with warmth—but not the glare of a scorching sun.

Apoplexy.—Over-fed and closely-confined fowls are frequently attacked by this ailment—down they drop, and die: unless relieved by relaxing medicine or the lancet. A dessert-

* Mr. Youatt's Lectures on Veterinary Medicine, in the London University.

spoonful of castor oil may be given with good effect. If *symptoms* of the coming fit were observed in time, bleeding in the axillary vein has been suggested to prevent it, but really there is nothing to be done but to bleed the patient freely *after* death, and prepare him for a decent appearance at table; for "birds give few indications by voice or manner, leading to what the medical man calls a *diagnosis*. Besides, how are we to bleed a bird? Few persons have had more experience with respect to birds, or dissected more than the writer, and yet we cannot lay down any directions on this point. In fact, the skin of most birds is very thin; it is unsupported by a thick mass of cellular tissue, and the vessels which ramify upon it are minute, none presenting a fair chance for successful venesection. To cut and wound a bird at random, for the purpose of obtaining a flow of blood, is barbarous."

The French writer, M. Flourens, distinguishes between a deep-seated and a superficial apoplexy, the first marked by a complete cessation of all movement, the other by imperfect muscular action and powerlessness of limbs; but pronounces both to be curable by aperients or bleeding.

Paralysis arises from the same causes, and prevention is the best cure for both. Opening food, alternating with corn, and not too much of any kind, especially in the case of fowls constitutionally disposed to affections of the brain, and notorious for excessive appetites, with open air and exercise, are the only modes of treatment that we can think of.

Vermin.—It is distressing to see fowls so frequently tortured by fleas and worse enemies too. While a hen is brooding she is regardless of them, but afterwards her misery is often perceptible. Viewing her torments, we are reminded of the not very benevolent sentiment attributed to one of our most selfish monarchs, that "scratching was too great a luxury for any subject"—and "perpetual itching without the privilege of scratching," was a malediction once uttered;

we should not wish an enemy greater torment. The desire which fowls have of dusting themselves—taking a dust bath, as it has been termed—indicates the easy and natural remedy for relieving them from fleas,—a heap of dry sand, or still better, of sifted ashes, is the simplest and most effective remedy; fowls know how to apply it themselves. As to more loathsome enemies to their comfort, and even to that of chickens, in whose tender down vermin will sometimes lodge, a good dusting of pungent snuff, or flour of sulphur, at the roots of the down or feathers, extending to the bare skin, will destroy them.

Cramp in the legs must be treated of, and more fully than many of those ailments enumerated above. Mr. Bailey attributes it to damp, and to stone or brick flooring in the poultry house. In such cases the substitution of floors of clay, well blended with sand and gravel, and rammed hard, is suggested by him. If damp be the cause to fowls, they should be removed to a dry situation; and if this cannot be done, he would give a strengthening diet, such as bread soaked in ale, once a day, a little meat occasionally, and oatmeal mixed with pounded peppercorns. He calls attention to this important point, that large and growing birds are often so weak in their limbs as to appear as if affected by cramp, because they rest on their knees; a habit so often noticeable in Cochin Chinas. With strength and age this debility will cease. Nourishing food will of course be the best medicine.

We are aware of the loss of whole broods of chickens, which had been kept on a boarded barn floor; but cannot say positively that the boards caused the mortality. The person who kept the fowls had no such failures after the boards had been removed: and though this was not conclusive evidence against the boarded floor, it is, with concurrent experiences, fair presumptive proof, that boards are injurious

to the free action of the feet; and flags, bricks, or stone, are objectionable also, no doubt,—from experience. However, a thick coat of fine gravel over a wooden floor would probably counteract its injurious effects.

But cramp in the limbs is generally the result of cold wet weather, the want of comfortable warm shelter, of poor feeding, or of some derangement in the digestive organs; and if warmth and good food do not remove it, we know not what to recommend. A warm bath would be troublesome, and homœopathic globules, even of the *most powerful medicines*, administered to ducks or geese, which are such frequent sufferers from cramp, would have, we suppose, little effect on their not very sensitive stomachs. The cramp is often but a symptom or an effect of some bodily derangement, the *cause* of which is to be ascertained, and, if possible, removed. We have just heard from a Cumberland gentleman—who has written to us in despair—that his ducks have been attacked with lameness, drooping of the wings and tail, curvature of the back; the eye dull and the appetite gone. Some of the sufferers have died in this condition, though they have been always well housed, and well fed. We have not seen them, but think it probable that an obstruction in the rump gland may have been the occasion of the affection complained of. This occasions inflammation and a tumour, which, if not opened by a longitudinal incision, to give vent to the glandular secretion, may affect the spinal or dorsal cord, so as to cause paralysis or cramp of the legs, and death, if the obstruction be not removed. The secretion in ducks and geese is considerable, and the cessation of its salutary discharge must be attended with some serious derangement of the system.

Indigestion, from failure of macerating power in the gizzard, is often caused among confined poultry by want of fresh green food, lime, gravel, &c. A spoonful of castor oil

given once or twice, may afford relief, with suitable diet and condiments. But as prevention is the better remedy, we would draw attention to Mr. Copland's mode of strengthening the constitutions of young birds—those of delicate breeds especially: if they show any indications of ailment, give sulphur and cayenne pepper, in the ratio of six parts of sulphur to one-sixth of pepper, mixed with barley-meal.

Tonic compounds are, no doubt, in many cases good fo all sorts of poultry. Cayenne pepper is a favourite American preventive of disease in young turkeys. It is mixed in the proportion of a table-spoonful to a quart of boiling water: bread is soaked in this, and given in case of chills, to which they are so liable.

SUPPLEMENTARY CHAPTER.

ON THE MOST POPULAR BREEDS.

In the body of this work the general term of Shanghae is applied to not only birds known as such, but to all the varieties of the popular Cochins, and buff, white, cinnamon, and partridge Cochins, now so generally raised as profitable birds in this country, are classed under the head of Shanghaes as being their most proper designation, as most of the Cochins originally came from Shanghae, and are to this day found in great numbers there. But the Shanghaes, as originally introduced and widely grown in this country, were gigantic muscular birds of great activity and wonderful powers of storing away food, which was absorbed into muscle and bone, but made comparatively little juicy flesh. The consequence was, they got a bad reputation, and the term was finally one of reproach; but upon the vast improvement which was made in them by careful breeding and high culture, the name of Cochins, as designated by cinnamon or white or buff or partridge, rapidly superseded the old term, and the despised but vastly improved Shanghae sailed under a new nomenclature. These, again, with many, have been supplanted by the

BRAHMAS,

now almost universally cultivated throughout the United States, and a most valuable variety—so hardy, so beautiful, and so excellent in all the relations of poultry life. Although they bear so close a resemblance to the Cochin in form, it is

undoubtedly a distinct breed, as is proved by their ability to transmit all their points unimpaired to their posterity. Their habits are quite dissimilar, their eggs are larger, they roam farther from home, and have more spirit and fiery *élan*. Their expression is indicative of good temper, and yet they are formidable foes when roused, their immense size and weight giving them great advantage over their rivals.

The hens excel as mothers, and layers of fine large eggs during the winter. Even when snow covers the ground, they lay regularly an average of five eggs a week, and, in fact, at all times when not employed in the nursery or renewing their plumage. The pullets attain full size at an early age, and are in their prime when eight months old. There are two kinds—the Light and Dark Brahmas.

The LIGHT BRAHMAS undoubtedly originated in, or were identical with, the gray birds which came from Shanghae; and it is claimed by Mr. Burnham of Boston that he originated the variety and brought them into notice first; he made them fashionable in England by sending a lot to Queen Victoria. He also claims originating the dark breed, which he states were gray Chittagongs crossed with Cochins. The two kinds are essentially distinct in their characteristics.

Brahmas are doubtless the largest of all the varieties of domestic fowls; some have reached seventeen pounds, which exceeds the weight of any other breed.

The form of the body corresponds with the great size. The breast in both sexes is very full, broad, round and prominent. The back is short, very broad between the shoulders and across the hips, the saddle-feathers being particularly abundant, and forming in the hen a soft cushion rising toward the tail. The neck should be neatly curved, slender near the head, but very full below, the neck hackle-feathers reaching well over the shoulders, so as to contrast strongly with the short hackle-feathers and snaky neck of the Malay. The wings should be but small, held tightly

by the body, and with the tips of the quills well covered by the saddle-feathers; the cock's tail, though small, should be carried erect, the sickle-feathers often spreading out laterally, as in the black-cock, the base of the tail being well covered by the abundant tail-coverts, which in the hens almost entirely conceal the short upright quills. The fluff should be abundant in both cocks and hens, well covering the hinder parts of the body, and standing out from the thighs, so as to give the birds the appearance of being very broad and deep when viewed from behind.

The thighs are large and muscular, well covered with soft feathers, which should curve round the hocks so as to hide that joint. Projecting vulture hocks are decidedly objectionable, though not an absolute disqualification. The shanks should be rather short, stout, placed wide apart, and abundantly feathered down to the outside of the outer and middle toes.

The head of the Brahma should be moderate in size, compared with the bulk of the bird, and surmounted with a triple comb, known as a pea-comb; this should be small, low in front, and firmly set in the head without falling over on either side, distinctly divided, so as to have the appearance of three small combs joined together in the lower part and back, the largest being in the middle, and each part slightly and evenly serrated.

This description of the comb is applicable to that of both sexes, due allowance being made for its smaller size in the hen. When first introduced, many of the Brahmas had single combs closely corresponding in shape and size with those of the Cochins; at the present time those possessing pea or flat triple combs are held in much higher estimation. The deaf-ear or ear-lobe is large and pendent in both sexes, the wattles comparatively small and well rounded.

In color the Light Brahmas are characterized by the general white color of the body, breast and thighs. The neck-hackle should be marked with a distinct black stripe

down the centre of each feather; there is a tendency in the cocks to come light or cloudy in the hackle—defects which very greatly detract from the beauty of the birds. The saddle-feathers in the cock are white or lightly striped with black, those of the hen being white. The first ten flight-feathers are black, but the secondary quills, which alone are visible when the wing is closed, are white on the outer web, consequently the dark color of the wing is not visible when folded. In the cock the tail is black, the tail-coverts being beautifully glossed with green, the lower ones being margined with silver, as are the two highest tail-feathers in the hen. The shanks in this variety should be bright yellow, well closed with white feathers slightly mottled with black.

The DARK or PENCILLED BRAHMAS are very distinct in color from the light variety. The upper part of the body of the cock is silvery white striped with black; the breast, under part of body and thighs either pure black or slightly mottled with white. The feathers that cover the bases of the quill-feathers of the wings are of a metallic-green-black, and form a broad well-marked bar across the wings. The flight-feathers are white on the outer and black on the inner webs. The secondary quills have a broad, dark, green-black spot at the end of each feather. The tail is black, the coverts of a lustrous green-black, the lesser feathers edged with white. The shank should be of a yellow color, sometimes of a dusky shade and well clothed with dark feathers slightly mottled with white.

The hens have a gray head; neck-hackle silvery white, striped with black. The remainder of the plumage should be dull white, distinctly pencilled with dark pencilling so closely as almost to cover the ground color and reaching well up the front of the neck.

The contrast of color afforded by the white plumage, delicately pricked out with black, and the brilliant red of the face, comb, ear-lobes and wattles, renders the Light Brahmas particularly attractive.

The dark or pencilled birds have steadily progressed in favor since their first introduction; their gigantic size, great weight, hardihood and prolificacy, and the ease with which they can be kept in confined ranges, all tend to render them much esteemed, and their nobleness of appearance and truthfulness with which they breed, to further make them valuable to the breeder.

To sum up their merits, Brahmas, as good, useful, hardy fowls, are unsurpassed. They are good layers of good-sized eggs, good foragers and good sitters; as mothers they cannot be excelled, no fowls being more careful not to step on their chickens, brooding them better, or searching more diligently for food. The chickens fledge more kindly than the Cochins, grow fast, and are exceedingly hardy; old and young take good care of themselves, and often recover from ailments that would carry off any of a less hardy sort. They are very good for the table, putting on flesh readily, and being much more juicy and much better in form than the Cochins. They are also small eaters, and greater lovers of an extensive range, which they turn to account, though they bear confinement better than most fowls. The hens sit less frequently, and a week's change of place will make them give up the fancy.

WHITE LEGHORNS.

One of the most important varieties of the Spanish type of fowl is the White Leghorn—most probably originated in the United States. It differs essentially from the White Spanish by the bright yellow color of the legs, feet and beak, and in the absence of the white face.

The Leghorns possess the advantages of the Spanish without their drawbacks. Their legs are bright yellow, and perfectly free from feathering on the shanks. The faces are red, the ear-lobes only being white. The comb in the cock is thin, erect and evenly serrated. In the hen it falls over like that of a Spanish hen. The tail in the cock is exceed-

ingly well furnished with side sickle-feathers, and in both sexes is carried particularly erect. The birds are active, good foragers, and have a very handsome and sprightly carriage. They are abundant layers of full-sized eggs, the hens rarely showing any indication to sit, but laying the whole year round, except during the annual month. The chickens are very hardy; they feather quickly and mature rapidly, thus having the advantage over the Spanish.

These fowls are an exceedingly useful as well as ornamental addition to our stock of poultry. Their only drawback for exhibition fowls is, they are hardly of sufficient size; but this might be remedied by crossing a Leghorn cock with a large Andalusian hen, which would produce a certain proportion of yellow-legged White that might give size to this very handsome and showy breed.

The Brown Leghorns—a colored breed of the same—have the comb same as the White; legs bright yellow; breast black, splashed with brown; wings reddish brown; tail large, full, sickle well curved; face bright red, free from wrinkles or folds; ear-lobes pure opaque white, rather pendent, thin and close-fitting to the head, smooth and free from wrinkles.

SULTANS AND RUMPLESS POLISH.

The SULTANS, or Feather-footed White Polish, are a very elegant and pleasing variety, and were imported from Constantinople. They partake of the character of the Polish in their chief characteristics, in compactness of form and good laying qualities.

In general habits they are brisk and happy-tempered, but not kept in as easily as Cochins. They are very good layers; their eggs are large and white; they are non-sitters and small eaters.

In size Sultans are smaller than the generality of Polish, the cocks weighing from four to five pounds, the hens being in proportion. In form they are very plump, full-crested,

short-legged and compact; the plumage pure and unsullied white throughout and very abundant; their tails are ample, and carried erect; their thighs are short, and furnished with feathers which project beyond the joint, or vulture-hocked. Their legs are short, white, and profusely feathered to the feet, which are five-toed. The comb consists of two small spikes situated at the base of a full-sized globular Polish crest; the wattles are small and red, wrinkled, both sexes being amply bearded. No fowls are more abundantly decorated—full tail of sickle-feathers, abundant furnishing, boots, vulture-hocks, beards, whiskers, and full round Polish crests formed of closely-set, silky, arched feathers, not concealing the eyes, but leaving them unobscured.

The legs, as old age approaches, are apt to get red, swollen and inflamed, perhaps from the spur growing in a curved form and producing irritation.

Sultans are abundant layers of moderate-sized eggs. As adults they are very hardy, with the exception of the tendency to cold, to which all crested birds are subject when exposed; but the chickens, from their rapid and early feathering, are difficult to rear, evidently suffering severely from the extra strain on their young constitutions. Sultans are small feeders. From their quick, lively and eccentric ways they make interesting pets.

The Rumpless Polish, or Ghendooks, must be included amongst the varieties of crested fowls. When the black was first imported, they had crests not fully developed, bearded, vulture-hocked, feather-legged, and perfectly rumpless, being destitute of that portion of the back-bone which forms the framework of the tail. Their carriage was peculiarly upright and striking, and altogether they were remarkable fowls. Some purely white Ghendooks were afterward imported. By carefully crossing these birds with other crested fowls the size of their crests was much improved, without losing their peculiar characteristics.

The sexes of Polish are difficult to distinguish at an early

age, the form of the feathers of the crest being the first reliable indication. These are much more pointed in the cockerels than in the pullets. As to their diseases, in damp situations they are liable to a cold, apt to degenerate into roup, and if they are too closely bred, liable to tuberculous diseases and deformity of the spine, causing humpback. All the varieties of Polish, unless supplied with a sand-bath, are very subject to be infested with vermin, which, however, may be readily destroyed by dusting flour of sulphur under the feathers with a common flour-dredger.

THE GAME FOWL.

There is a generally recognized standard for form and figure, which must not be departed from, whatever variety of color the birds may present. In weight they vary; four pounds eight or ten ounces was the weight aimed at by breeders for the cockpit, but six pounds is often reached, when two years old; but beyond this weight impurity of blood may be suspected.

The carriage and form of the Game cock are certainly more beautiful than that of any other variety of domestic fowl. The neck is long, strong and gracefully curved; the hackle short and very close; the breast broad; the back short, broad across the shoulders; the whole body very firm and hard, with a perfectly straight breast and back, the latter tapering toward the tail; the wings large and powerful, and carried closely pressed into the sides; the thighs strong, muscular and short, tightly clothed with feathers, and well set forward on the body, so as to be available for fighting; the shanks rather long, strong but not coarse, covered with fine scales, and of moderate length; the feet flat and thin, the toes long and spreading, so as to give a good hold on the ground; the hind toe must be set low down, so as to rest flatly on the ground, and not merely touch with the point—a defect which is known as "duck-footed," and

renders the bird unsteady when pushed backward by his opponent.

The plumage is compact, hard and mail-like to a remarkable degree, and possesses a brilliant glossiness that cannot be surpassed. The tail in the cock is rather long, the sickle feathers gracefully arched and carried closely together, the whole tail curved backward and not brought forward over the back—a defect called squirrel-tailed.

The head in this variety is extremely beautiful, being thin and long, like that of a greyhound; the beak massive at its root, strong, and well curved; the eye large, very full, and brilliant in lustre; the ear-lobe and face of a bright scarlet, and the comb in undubbed birds single, erect, and thin. The spur, which is exceedingly dense and sharp, should be set low on the leg, increasing its power; spurs are also frequent on the hens.

In the hen, the form, making due allowance for the difference of sex and alteration of plumage, resembles that of the cock. The head is neater, the face lean and thin. The small thin comb should be low in front, evenly serrated, and perfectly erect. The deaf-ear and wattles should be small. The neck, from the absence of hackle feathers, looks longer and more slender than that of her mate. The tail-feathers should be held closely together, and not spread out like a fan. The plumage should be so close that the form of the wing should be distinctly visible, the outline not being hidden by the feathers of the body.

The Dominique Game, a great favorite in this country, repeats the colors of the Cuckoo Dorking, each feather being banded with dark gray on a lighter ground. The other favorite Games are the Earl Derby and Spangled.

THE DOMINIQUE.

The Dominique is in all respects an American breed, and well adapted to the wants and uses of poultry-keepers who keep fowls for both eggs and flesh. It is a fact well estab-

lished, that the medium-sized fowls afford the most eggs and flesh for the amount of grain or food consumed. In this respect the Dominiques have no superiors as barn-yard fowls. They are perfectly hardy, bright and active, with rose or double combs that will withstand the coldest weather without injury. The cocks weigh from seven to eight pounds, and the hens from five to six; they both have plump and symmetrical bodies, very full breasts and yellow legs. The plumage is at once beautiful, not only on near inspection, but at a distance on the yard or lawn, being shaded with white and slaty blue in narrow bands, and being finely pencilled among the smaller feathers, the cock having heavy hackle and saddle-feathers and fine, flowing tail. They are good layers and sitters and careful nurses.

As the Game fowl is impatient of restraint, a good grass run is essential to keep it in good condition. In breeding great care must be taken in matching, as regards form, feather and the color of the beak and legs. Much depends upon the purity of the hens, for a good Game hen, with a dunghill cock, will breed good fighting-birds, but the best Game cock, with a dunghill hen, will not breed a bird good for anything. It is not desirable to mate old birds; a stag, or last year's bird, placed with hens two or three years old, will produce finer chickens than when an old cock is mated with last season's hens. For great excellence, four hens with one cock is sufficient.

In color the eggs of the Game fowl vary from a dull white to fawn, but crosses with the India Game impart a still darker tint. The average weight is from two to two and a half ounces.

As sitters the hens have no superiors. Quiet on their eggs, regular in coming off, and confident, in their fearlessness, of repelling intruders, they rarely fail to rear good broods, and defending them from violent attacks.

The newly-hatched chickens are very attractive; those of the darker breeds are light brown, with a dark-brown

stripe down the back and a narrower line over the eye. The duckwings, grays and blues have proportionally paler hues, but the stripe is seldom absent. The chickens feather rapidly, and with good care and liberal, varied diet, such as cottage-cheese, chopped egg, with a portion of onions or leeks, breaderumbs, grits, boiled oatmeal, barley and wheat, with some milk in the earlier stages of their growth, are reared with less difficulty than other fowls.

As Game fowls *will* fight, and as they are frequently trained for fighting, it is argued that their combs, ear-lobes and wattles should be removed, or "dubbed." This had best be entrusted to the skilled professional. For those who desire further information on this breed we refer them to the work of Dr. J. W. Cooper, of West Chester, Pennsylvania, which is exhaustive on the subject of "Game Fowls."

BANTAMS.

Some of the newer kinds of Bantams are the Pekin or Cochin, and the Japanese.

The PEKIN or COCHIN Bantams are a most singular variety, and may be described as miniature Cochins, bearing the same relation to the full-sized Buff Cochins that Game Bantams do to ordinary Game fowls, with a still greater disparity of size. The resemblance to the Buff is very close in color, form and feathering, having the same fluffy plumage, uncouth Cochin form, the feathered legs and single comb. The smaller their size, the more highly valued they are in the show-pen. Pekin Bantams are good sitters and workers, the males even taking a share in brooding the chickens. They were originally imported from Pekin, in China.

The JAPANESE are exceedingly short-legged, full-feathered, with largely developed single combs, and full-sized, well-sickled tails. In color they vary; some marked as the Cuckoo Dorkings, both cocks and hens showing the same transverse bands of dark grayish-blue over a lighter

ground color; others variously marked and speckled; but those are prettiest that have pure white bodies and wings with flowing black sickle feathers in the tail, making an elegant appearance.

Some small FRIZZLED-FEATHERED Bantams have also been introduced from Japan.

The chickens of almost all the varieties of Bantams are hardy, and easy to rear, if kept free from the wet, as that is fatal. They do not require any particular diet; a supply of animal food in the shape of ants' eggs, or cottage-cheese, oatmeal, grits, wheat-screenings, etc., will get them through chickenhood.

Even as profitable poultry, Bantams are not destitute of merit; in proportion to the food they consume, they furnish a fair supply of eggs. As table fowls, the hardy little Game breeds are excellent, plump, full-chested and meaty. As useful and ornamental pets, we know of no birds that are superior.

THE FRENCH BREEDS—HOUDANS, CRÈVECŒURS, LA FLÉCHE, ETC.

The rearing of poultry has long been regarded as one of the staple industries of the French people. The French breeds named below have been imported at considerable expense into this country, but have never become very popular.

The HOUDANS—large, heavy, short-legged, five-toed fowls, with small, light bone, a remarkable absence of offal, and with irregularly speckled or mottled plumage, black-and-white speckled—strongly call to mind the old-fashioned colored Dorking. Their merits as table-fowls are of the highest excellence. No pure-bred chickens mature with greater, or perhaps with as great a degree of rapidity; they feather early, are extremely hardy and are easily reared. The old birds are robust, and the eggs, which are numerous, are invariably fertile.

The crest is invariably black-and-white spangled, like its plumage; comb triple, the outsides opening like two leaves of a book, and the centre having the appearance of an ill-shaped long strawberry. With the cock the comb is very large, whilst the hen's is scarcely perceptible. The legs are strong, and of a lead color, with five claws, the two hind ones above the other. Strongly-developed whiskers and beards, both in cocks and hens. Their qualities surpass even their beauty; they lay large white eggs, and the chickens are fit for the table at four months old.

The CRÈVECŒURS, so named from the town in Normandy, with their black plumage, large crests and two-horned combs, render them very conspicuous, if not elegant, fowls.

The hens are low on the legs, with large fleshy thighs, the wings large and the body square; the abdomen is voluminous and pendent, especially in those which are more than a year old; they walk slowly, scratch but little, and rarely fly. Their plumage is black, or black and white variegated; they carry on their heads a large tuft, and a small upright two-horned comb, whilst a large cravat of feathers under the neck gives to them a matronly air. They are very tame, ramble but little, and prefer seeking their food on the dunghill in the poultry-yard to wandering off. They are somewhat later in laying, and lay less frequently, than the common fowl, but their eggs are much larger, and they continue to lay a longer time. They sit badly, and are apt to break their eggs from their great weight, which is at least one-third more than that of the common fowls. They are very easily fatted.

The cocks, which are similar in form to the hens, have a brilliant black plumage, sometimes golden or silver-colored; their heads are handsomely surmounted with beautiful tufts and large, toothed, two-horned combs, which, together, form a crown; they have also dense cravats of feathers, and are adorned with handsome pendent wattles.

Like the Houdans, they are heavy, short-legged, compact fowls, but their shanks are much darker in color and four-toed; but the chicks do not appear quite so hardy, nor are they reared with such facility. In favorable localities they mature very rapidly. Like all black breeds, they occasionally produce pure white chickens. There is a variety of this breed of a slaty-blue color. This breed crosses well, particularly with the Dorking.

The LA FLÉCHE are a tall, handsome breed, so close and hard-feathered that they are much heavier than they appear to the eye. They are capital layers of large eggs, and heavy fowls for the spit, but when plucked their long legs and black shanks are against their value as market fowls.

In appearance they resemble the Spanish; the plumage, which is jet black, fits close to the body; their skin is white, fine and transparent. The weight, fully grown, is from eight to ten pounds, and the bones less than one-eighth of the weight. When standing erect they measure twenty-two inches, and twenty-three in circumference under the wings. The legs are four-clawed, of a lead color, the comb two-horned, the face red, but ear-lobe white, like the Spanish. They lay abundantly early in the year, but as sitters they are as bad as the Spanish.

The LA BRESSE are raised in the north-east portion of France. They are smaller birds than either of the above, and inferior. They have no special characters, but look like ordinary single-combed, speckle-feathered, barn-yard fowls. They are above the average size, short-legged, small boned, the plumage white, with some few spots of gray. They have four toes on the leg, which is brown and smooth; the skin is fine, and the flesh delicate and savory.

The GUELDERS, or GUELDERLANDS, after the province of Holland of that name, are birds of medium size, with very full, prominent breasts and large flowing tails. Their most striking characteristics are in the head, which is ornamented with very large pendent wattles, but is destitute of

either feathered crest or comb, except sometimes two red points. Their color is generally either gray, cuckoo or pure black, sometimes spangled like a Golden Polish.

The Cuckoo Guelders have large pendulous wattles like the black, and some have strongly-feathered legs. Guelders are very good layers, but non-sitters.

THE CAYUGA DUCK.

Of the origin of the Cayuga not much reliable is known. The Cayuga, Big Black or Lake Duck, in perfection, is black with a white collar on the neck, or white flecks on the neck and breast; rarely black without white; and as the white seems inclined to increase, we usually select them nearly or quite black for breeding. The duck has a faint green tint on the head, neck and wings. The drakes usually show more white markings than ducks, and the green tint on the head and neck is more strongly marked.

When well fed, the duck begins to lay about the last of March or first of April, and usually gives an egg every day until fifty or ninety are laid, when she will make her nest and sit, if allowed; if not, she will generally lay a little in September.

They are hardy, of good size, and for the table are superior to other ducks; the flesh quite dark and highly flavored. If well fed, they become very fat, and can be made to weigh, drakes nine and ducks eight pounds, or seventeen pounds per pair, though twelve to fourteen pounds per pair is a good average. They do not gain after six months old.

Cayuga Ducks are very quiet in their habits; they are rarely able to rise from the ground—a fence one foot high will turn them; they are not disposed to wander from home; they sit well, but are careless mothers. They cross readily with other ducks, and produce is certain.

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